

StorPoint CD+
Network CD-ROM Server
User's Manual version 1.1

Safety Notices

Please observe all safety markings and instructions when using this product.

Important! - potential hazard that can seriously impair operation.

Do not proceed any of the above notices until you have fully understood the implications.

Electromagnetic Compatibility (EMC)

USA - This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded (STP) network cables must be used with this unit to ensure compliance with the class B limits.



Europe - This digital equipment fulfils the requirements for radiated emission according to limit B of:

- SCS: EN55022/1998, and the requirements for immunity according to EN55024/1998 residential, commercial, and light industry
- IDE: EN55022/1998, and the requirements for immunity according to EN55024/1998 residential, commercial, and light industry

Compliance is not valid for unshielded network cables.

Liability

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AXIS StorPoint CD+
Rev 1.1

User's Manual
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Preface

Thank you for purchasing the AXIS StorPoint CD+ CD/DVD Server. This product is developed to make the information stored on CD/DVD-ROMs available to all users on an Ethernet network.

About This Manual

The manual provides introductory information as well as detailed instructions on how to set up and manage the StorPoint CD+ in various network environments. It is intended for everyone involved in installing and managing the StorPoint CD+. To fully benefit from the manual, you should be familiar with basic networking principles.

This manual applies to the AXIS StorPoint CD+ with firmware release 6.00 and subsequent releases until otherwise notified.

About Axis

Axis Communications is dedicated to providing innovative solutions for network-connected computer peripherals. Since the start in 1984, it has been one of the fastest growing companies in the market and is now a leader in its field.

ThinServer™ Technology

enables Axis' products to act as intelligent file server independent ThinServer devices. A ThinServer device is a network server which includes "thin" embedded server software capable of simultaneous multiprotocol communication, scalable RISC hardware and a built-in Web server which allows easy access and management via any standard Web browser. The ThinServer technology makes it possible to connect any electronic device to the network, thus providing "Access to everything".

Mobile Access by Axis

The *Bluetooth* Access Point from Axis is part of a family of network access solutions that create local "hot spots" of high-speed wireless connectivity areas. These areas provide a wireless communications link to local networks and the Internet for mobile devices equipped with Bluetooth wireless technology, an industry supported technology that provides a low-cost means for supporting short-range wireless communications between portable devices. Axis provides solutions that scale from network access devices to larger, more advanced systems to meet the range of needs for creating new mobile networks and services.

Network Print Servers

offer a powerful and cost-efficient method for sharing printer resources in your network. They connect to any standard printer, featuring high performance, simple management and easy upgrading across the network. The print servers are available in Ethernet, Fast Ethernet and Token Ring versions.

IBM Mainframe and S/3x - AS/400 Print Servers and Protocol Converters

include a wide range of LAN, coax and twinax attached print servers for the IBM host environment. By emulating IBM devices, these servers provide conversion of the IPDS, SCS and 3270DS data streams to the major ASCII printer languages.

Network Attached CD/DVD Servers

provide a flexible and cost-efficient solution for sharing CD-ROMs, DVD-ROMs and other optical media across the network. They are available in Ethernet, Fast Ethernet and Token Ring versions.

Network Camera Servers

provide live images using standard Internet technology, thus enabling access to live cameras via any standard Web browser. They offer a perfect solution for remote surveillance over the Internet; their sharp images can bring life into any web site. These servers support Ethernet as well as PSTN and GSM phone lines.

Network Document Servers

enable easy distribution of paper-based information across workgroups and the enterprise. By sending scanned documents to your destination via the Internet/intranet, you will reduce your faxing/mailing costs, as well as save time, thus improving your organization's efficiency.

Support Services

Should you require any technical assistance, please contact your Axis reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response. If you are connected to the Internet, you can:

- Download user documentation and firmware updates
- Find answers to previously resolved problems in the FAQ database. Search by product, category or phrase
- Report problems to Axis support staff by logging in to your private support area

Visit the Axis Support Web at <http://www.axis.com/techsup/>

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Section 1 Introduction

AXIS StorPoint CD+

The StorPoint CD+ connects CD/DVD-ROM drives, CD-R/RW writers, towers and changers to 10/100 MBit Ethernet networks. All users on the network can share the information on any disc inserted into a connected drive.

The enclosure and connectors are designed for installation into a standard 5 $\frac{1}{4}$ " tower. An IDE version, a single and a dual SCSI port version are available. It is not possible to mix IDE disks and drives with a SCSI version, or vice versa.

The StorPoint CD+ is server independent, which means that no software has to be loaded on any server, and no additional software has to be installed on any client.

The StorPoint CD+ supports hard disk caching which means that the inserted discs can be copied to a hard disk attached to the SCSI or IDE bus. The caching mechanism allows users to access the networked discs at hard disk speed.

The StorPoint CD+ supports CD-Recordable drives which makes it possible to write files to CD-R/RW discs over the network.

This table lists the maximum number of drives and discs that can be managed by a single unit:

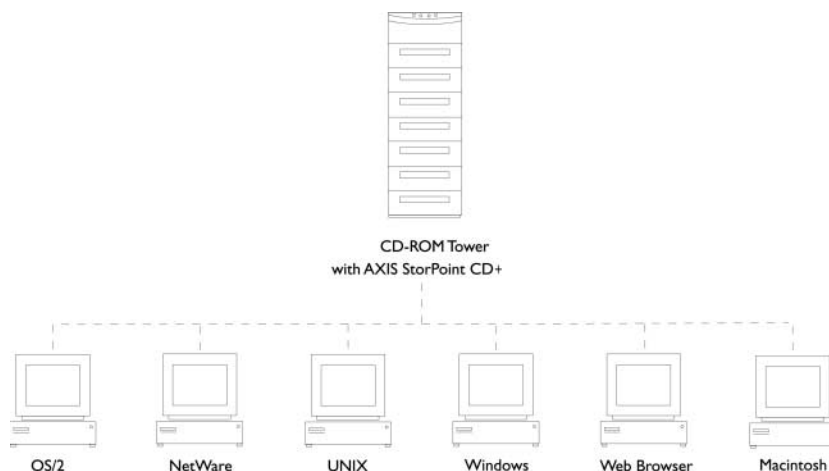
Max no. of	SCSI	Dual SCSI	IDE
Disc drives	7	14	8
Hard disks	6	13	7
Discs using hard disk caching	255	255	255

- Notes:
- o The Basic versions of the StorPoint CD+ do not support hard disk caching, writing to recordable discs or organizing discs into folders.



Features and Benefits

- File Server Independence** The StorPoint CD+ is connected as a node in an Ethernet network. The StorPoint CD+ acts as a file server to the network. This means that it is independent of other file servers, i.e. the communication takes place directly between the network client and the StorPoint CD+. This results in high performance, reliability and independence of other equipment.
- Plug and Play** The file server independent approach makes the installation quick and convenient. In most environments the physical connection to the network is the only installation required prior to starting work with the StorPoint CD+. No software needs to be installed on clients or file servers. Your computer will see the StorPoint CD+ as another network file server, and you access it using the standard commands used in your network operating system.
- Environments** The StorPoint CD+ can be used simultaneously from NetWare, Windows, OS/2, DOS, UNIX, Macintosh and Internet/intranet clients. It supports basic messaging and network protocols:
- NCP over IPX
 - NCP over IPX/UDP (NetWare IP)
 - NCP over TCP/IP (PureIP)
 - SMB over NetBIOS/NetBEUI
 - SMB over NetBIOS/TCP/IP
 - NFS over UDP/IP
 - HTTP over TCP/IP
 - AFP over AppleTalk
 - AFP over TCP/IP
 - FTP over TCP/IP



Internet/Intranet Web Server	The built-in Web server makes it possible to access data via any standard Web browser, such as Netscape Navigator or Microsoft Internet Explorer. The support includes configuration, management and disc access.
Speed	By using a 32-bit RISC processor and cache memory expandable up to 256 MB, data throughput of up to 3200 kB/sec on a single client, or 4000 kB totally for multiple clients, is obtained – ample speed for demanding CD-ROM applications.
Security	Disc access can be restricted by setting up native access control in all network environments. It is also possible to limit the number of simultaneous users of any disc in order to comply with license agreements.
Maintenance	New software can easily be downloaded to the StorPoint CD+ Flash memory by using Windows Explorer drag-and-drop, or over the network using FTP. All updates are free of charge.
Network Management	The StorPoint CD+ supports the Simple Network Management Protocol, SNMP.
Hard Disk Caching	The StorPoint CD+ includes a hard disk caching facility that can copy the inserted discs to attached hard disks. This mechanism will allow faster user access, especially if you are using changers. Furthermore, a cached copy can be accessed even though the original disc has been ejected from the drive.
CD Grouping	In the Microsoft and IBM (SMB) and the Novell NetWare network environments it is possible to use your Windows Explorer to create new group folders under the Volumes folder. This makes it possible to group discs, and thus easier to locate and access.
Easy Network Backup	With the support of writing to recordable discs using simple drag-and-drop, the StorPoint CD+ makes an excellent backup solution over the network.
Scalable Solutions	If you have more than one StorPoint CD+ on your network, the AXIS StorPoint DISCO is a convenient tool for locating and accessing the networked CD/DVDs. The AXIS StorPoint DISCO utility can be downloaded free of charge from the Axis Web Site.
Asian Languages	The StorPoint CD+ supports double-byte character encoded discs. The supported languages are: Simplified Chinese, Traditional Chinese, Japanese and Korean.

Section 2 Installing the StorPoint CD+

This section includes the setup procedures for getting your StorPoint CD+ up and running:

Stage 1 - Connecting the StorPoint CD+ to the network

Stage 2 - Assigning an IP address

Stage 3 - Setting system parameters

You should then proceed to the relevant sections of the manual depending on your network environment:

- *"Microsoft & IBM Networks (SMB)"* on page 27
- *"NetWare (NCP)"* on page 43
- *"UNIX (NFS)"* on page 66
- *"Macintosh (AFP)"* on page 71
- *"Web Browser (HTTP)"* on page 81

- Note:
- o Typically, your StorPoint CD+ will already be installed in a CD-ROM tower when delivered. However, if required:
 - Refer to *"Installing the StorPoint CD+ in a Tower"* on page 149 on how to install the StorPoint CD+ in a CD-ROM tower.
 - Refer to *"Connecting the Drives to the StorPoint CD+"* on page 151 on how to connect CD-ROM drives to the StorPoint CD+.

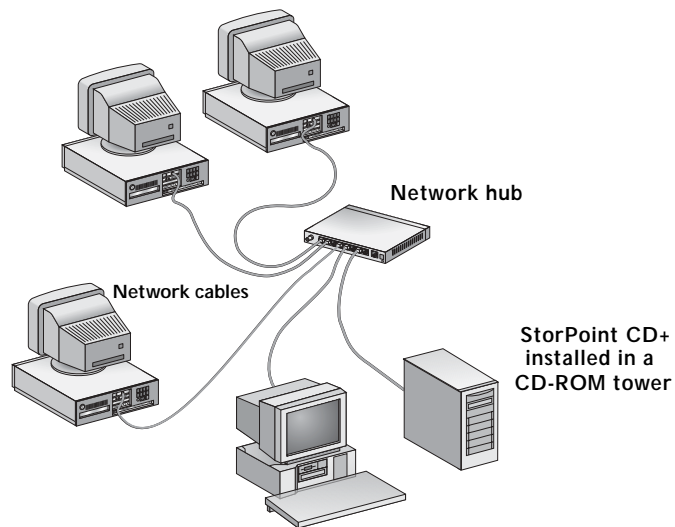
Connecting the StorPoint CD+ to the Network

Before You Begin Always consult the Network Administrator before making changes to the network configuration.

Procedure To connect the StorPoint CD+ to your network, follow these steps:

1. Turn off the power.
2. Connect the network cable to the appropriate connector, i.e. RJ-45 for 100baseTX and 10baseT.
3. Switch on the tower.

The StorPoint CD+ front panel indicators will flash during power-on and self-test. When the Status indicator stops flashing and turns solid green, the StorPoint CD+ is ready for use.



Assigning an IP Address

To establish communication with the TCP/IP network, you must assign an appropriate IP address to your StorPoint CD+. For example, this is needed in order to access the StorPoint CD+ Web interface.

- Note:**
- o Setting the IP address is not needed if you are not using IP addressing on your network, i.e. in these environments:
 - Windows (SMB over NetBEUI only)
 - NetWare (IPX only)
 - Macintosh (AFP over AppleTalk only)
- You can then proceed directly to the appropriate network environment section of the manual.

Before You Begin Make sure the StorPoint CD+ is powered up and attached to the network.

IP Address Obtain an unused IP address from the Network Administrator, unless you have a DHCP server on your network.

DHCP If you are using DHCP, the IP address will be set automatically as soon as you connect the StorPoint CD+ to the network. To find out which IP address has been assigned to your StorPoint CD+, check your DHCP server. If you want to set the IP address manually, you can disable DHCP by setting the appropriate configuration parameter.

System Privileges You will need *root* privileges on your UNIX system and *administrator* privileges on Windows NT/2000 and XP.

Ethernet Address Depending on the method you are using, you will need to know the Ethernet address of your StorPoint CD+. The Ethernet address is the same as the serial number.

You will find the **serial number** on the labels on the underside of the unit and the back of the tower.

- Important!**
- o Do not use the default or example IP address when installing your StorPoint CD+. Always consult the Network Administrator before assigning an IP address.

Methods for Setting the IP Address

You can set the IP address using one of these methods, depending on your network operating environment:

Method	Network environments	See ...
Web browser *	Windows 95/98/NT/Me/2000/XP	page 13
ARP *	Windows 95/98/NT/Me/2000/XP, NetWare UNIX, OS/2	page 14 page 16
DHCP	Windows NT/2000, NetWare, UNIX, Macintosh	page 17
BOOTP	UNIX	page 17
RARP *	UNIX	page 18
Text editor	Macintosh	page 20
AXIS IP Installer *	Windows 95/98/NT, NetWare	page 18

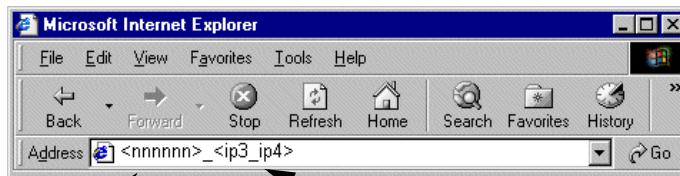
*) These methods operate on single network segments only, i.e. they cannot be used over routers.

- Note:
- o When the IP address has been successfully assigned to your StorPoint CD+, you can set the **ProtectIP** parameter to **on** in order to avoid accidental or malicious changing of the IP address. With this configuration, the StorPoint CD+ will no longer accept a new IP address using the Web browser or ARP method. You will find the **ProtectIP** parameter under the **[IP]** section in the `config.ini` file located in the `System/ServerProperties` folder. Use a text editor to edit the file.

Web Browser

In most Windows environments, you can use a standard Web browser, e.g. Internet Explorer or Netscape Navigator, to set the IP address. Follow these steps:

1. Start your Web browser.
2. In the location/address field, enter the following:



<nnnnnn> are the last six digits of the serial number, e.g. 3E5207 for the serial number

<ip3_ip4> the last two groups of the desired IP address, e.g. 253_80 for the IP address

- Note:
- o On a Class C network, you can enter simply

```
<xxxxxxx>_<ip4>
```

where <xxxxxxx> are the last six digits of the StorPoint CD+ serial number and <ip4> is the last group of the desired IP address.

Example

The serial number of your StorPoint CD+ is 00408C3E5207 and you want to assign it the IP address 192.16.253.80. Your Windows client

has the IP address 192.16.6.40. You enter *3E5207_253_80* in the location/address field.

The StorPoint CD+ will retrieve the first two groups of the new IP address from the subnet where the client issues the broadcast.

When the IP address has been successfully set, the StorPoint CD+ File View page will appear in your Web browser.

- Important!**
- o You must have the NetBEUI protocol enabled. In Windows 2000, this is not the default setting.
 - o The new IP address must be set within 30 minutes after restart.
 - o This method will work for most Windows configurations. However, if you experience problems when using this method, we recommend that you use the AXIS IP Installer for setting the IP address. See "*AXIS IP Installer*" on page 18.

ARP in Windows Perform the following commands to download the IP address and verify correct Internet communication in Windows 95/98/Me and Windows NT/2000/XP.

Start a DOS window and type the following command:

Syntax Windows 95

```
arp -s <IP address> <Ethernet address> <my PC IP address>
ping <IP address>
```

where <my PC IP address> *is the IP address of your Windows 95 PC.*

Example Windows 95

```
arp -s 192.16.253.80 00-40-8c-10-00-86 171.16.6.40
ping 192.16.253.80
```

Syntax Windows 98/Me and Windows NT/2000/XP

```
arp -s <IP address> <Ethernet address>
ping <IP address>
```

Example Windows 98/Me and Windows NT/2000/XP

```
arp -s 192.16.253.80 00-40-8c-10-00-86
ping 192.16.253.80
```

The host will return 'Reply from 192.16.253.80 ...' or some similar message. This indicates that the address has been set and the communication is established.

- Notes:
- o Once the StorPoint CD+ has established communication using an appropriate IP address, the `arp` command cannot be used to change the address. This is to avoid accidental or unauthorized changes. However, if you restart the StorPoint CD+, you can change the IP address within 30 minutes.
 - o Please note that when you execute the `ping` command for the first time, you will experience a significantly longer response time than usual.
 - o If you are using host names, you can map a unique host name to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.

ARP in UNIX and OS/2 Follow these steps to download the IP address and verify the communication in UNIX and OS/2:

1. Type the following command:

```
arp -s <IP address> <Ethernet address> temp
```

2. Ping the unit as follows:

```
ping <IP address>
```

Example:

```
arp -s 192.16.253.80 00:40:8c:10:00:86 temp  
ping 192.16.253.80
```

The host will return '192.16.253.80 is alive', or some similar message to indicate that the address has been set and the communication is established.

- Notes:
- o Once the StorPoint CD+ has established communication using an appropriate IP address, the `arp` command cannot be used to change the address. This is to avoid accidental or unauthorized changes. However, if you restart the StorPoint CD+, you can change the IP address within 30 minutes.
 - o Please note that when you execute the `ping` command for the first time, you may experience a significantly longer response time than is usual.
 - o If you are using host names, you can map a unique host name to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.
 - o The `arp -s` command may vary from system to system. Some BSD-type systems expect the IP address and Ethernet address in reverse order, whereas IBM AIX systems require the additional argument `ether`. For example:

```
arp -s ether <IP address> 00:40:8c:10:00:86 temp
```


DHCP in Windows,
NetWare and UNIX

Follow these steps to use the DHCP method:

1. Edit or create a scope in the DHCP manager of the DHCP daemon. For Windows NT/2000 servers, refer to the *"Windows NT Resource Kit"* on how to do this.

The entries made in this scope typically include the following parameters:

- Range of IP addresses
- Subnet mask
- Default router IP address
- Lease duration
- Mail server IP address
- DNS server IP address
- WINS server IP address(es)
- Domain name
- NTP server IP address
- NDS tree name
- NDS server IP address(es)

2. Activate the scope.

DHCP is enabled by default. The IP address and all the other settings will be set automatically.

- Notes:
- o To fully benefit from DHCP, it is recommended that you use the WINS name resolution protocol available in Windows NT/2000. If you intend to use WINS, at least one WINS server IP address must be included in the scope. Once the IP address is received, the StorPoint CD+ will register its host name and IP address on the WINS server.
 - o You might want to include an SLP scope list and some SLP directory agents in the DHCP scope. However, we recommend that you specify the SLP settings in the StorPoint CD+ parameter list instead. You can do this via the StorPoint CD+ Web interface or by editing the `config.ini` file.

BOOTP in UNIX

Follow these steps to use BOOTP in UNIX:

1. Append the following entry to your boot table (typically `/etc/bootptab`):

```
<host name>:ht=<hardware type>;vm=<vendor magic>;\
:ha=<hardware address>;ip=<IP address>;\
:sm=<subnet mask>;gw=<gateway field>
```

where:

ht = ether for Ethernet

vm = rfc1048

ha = The Ethernet or node address, i.e. the StorPoint CD+ serial number

ip = The IP address of the StorPoint CD+

sm = The subnet mask
gw = The default router address

Example:

```
cdserv:ht=ether:vm=rfl048:ha=00408c110086:ip=192.36.253.80:\  
:sm=255.255.255.0:gw=192.36.253.254
```

2. Make sure a unique host name is mapped to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.
3. Start the BOOTP daemon (if not already running), typically by the command:
`bootpd -a`
4. Restart the StorPoint CD+ to download the IP address, default router address and subnet mask.

RARP in UNIX Follow these steps to use the RARP method in UNIX:

1. Append the following line to your Ethernet address table. This is typically performed using the command `/etc/ethers:`

```
<Ethernet address> <IP address>
```

Example:

```
00:40:8c:10:00:86 192.16.253.80
```

2. If you are using host names, you can map a unique host name to the acquired IP address. Refer to your system manuals or to the Network Administrator for instructions on how to perform the name mapping on your particular system.
3. If it is not already running, start the RARP daemon. This is typically done using the command `rarpd -a`.
4. Restart the StorPoint CD+ to download the IP address.

AXIS IP Installer AXIS IP Installer is an application that allows you to assign IP addresses to your StorPoint CD+, find IP addresses of already installed StorPoint CD+s and access the StorPoint CD+ internal Web pages for easy configuration.

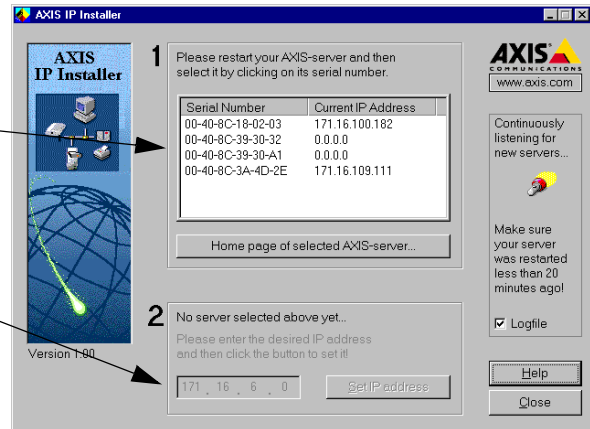
The required utility software is available on the AXIS Online CD. It can also be downloaded from the Axis Web Site at <http://www.axis.com>

Follow these steps to install the AXIS IP Installer:

1. Locate the setup file, `Setup.exe`, and choose the **Run** option from the Windows **Start** menu.
2. Follow the instructions as they appear on the screen.

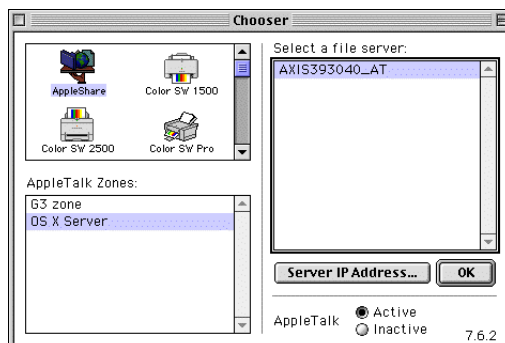
When finished, the AXIS IP Installer will be available from your Start menu. To run the program, select Programs | Axis Communications | AXIS IP Installer.

1. Select the serial number of your AXIS StorPoint server in this list.
2. Enter the desired IP address in this field.



Text Editor in Macintosh To set the IP address for your StorPoint CD+ follow these steps:

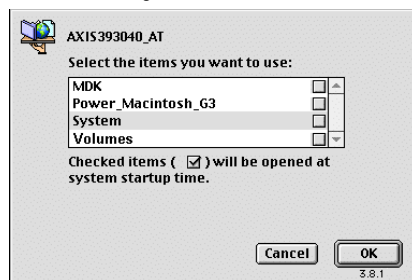
1. Open the Chooser from the Apple menu.
2. Click the AppleShare icon.



3. From the **Select a file server** list, select **AXIS<nnnnnn>_AT** where <nnnnnn> are the last six digits of the StorPoint CD+ serial number.
4. Select **Registered User** and click **Connect**. By default, the Name is set to **root** and the Password is set to **pass**.



5. Select the **System** folder and click **OK**.



6. Open the **System** icon created on the desktop and select the **Server Properties** folder.
7. Open the **config.ini** file.
8. In the text editor go to the **[IP]** section and change the Internet address to the required IP address.
9. Go to the **[Server]** section and set **Restart = yes** to restart the server.
10. Select **Save** from the **File** menu.

System Settings

The StorPoint CD+ can be configured using one of these tools:

- **Web browser** - The StorPoint CD+ Web interface, which is the preferred administration tool. Requires the IP address to be set. See description below.
- **Text editor** - The StorPoint CD+ text files. Refer to "*Text Editor*" on page 125. However, hard disk caching cannot be performed from this interface.

Accessing the StorPoint CD+ Web Pages

The StorPoint CD+ web interface is divided into two parts:

- The **File View** page for browsing and accessing files and folders on the networked discs. This page is available to all users.
- The **Administration** pages for specifying configuration parameters and access rights. These pages are intended for the Administrator only.

You access the web pages using a standard web browser:

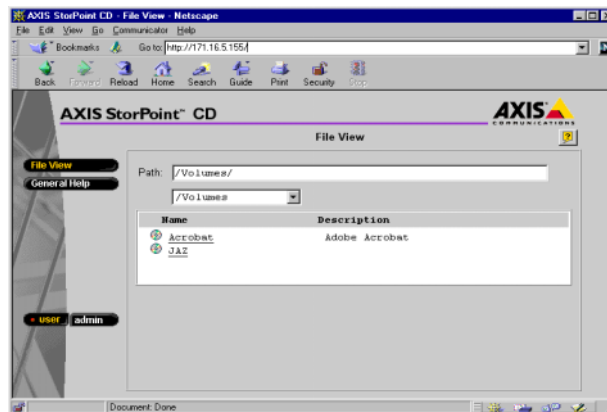
- Netscape Navigator version 4.08 or higher
- Internet Explorer version 4.0 or higher

Follow these steps:

1. Start the Web browser.
2. Enter the name or IP address of the StorPoint CD+ in the location/address field:

```
http://<IP address>
```

The File View page is displayed.



From this page, users can display and access the discs inserted in the connected drives according to the access permissions set up by the Administrator.

3. Click **admin** to access the Administration pages. You will be prompted to supply the Server password the first time during a session. Any user id can be used. The default password is `pass`.





- The Server Settings page is displayed. From this page you can edit the system settings and display information about the connected drives. You can also view the current configuration settings, shutdown the server, restart the server and restore the factory default settings.




SCSI Server - the icons displayed to the left represent all the units connected to the SCSI bus listed by SCSI ID.



IDE Server - the icons displayed to the left represents all the units connected to the IDE bus listed as Master or Slave for each bus
To display information on a particular device, simply click the corresponding icon:

-  Server
-  Disc drive or LUN expander (LUN expander only applies to SCSI)
-  Changer
-  Hard disk

- Main Menu** From the main menu, you can access the Administration pages:
- **Server Settings** - System settings and drive information.
 - **Discs & Drives** - Managing the drives and the inserted discs. Setting up access rights. Archiving discs to hard disk cache.
 - **Network Settings** - Specifying settings for the network protocols used.
 - **Event Log** - Viewing the event log that contains occurrences in the StorPoint CD+.
 - **Statistics** - Displaying statistics on the StorPoint CD+.
 - **Support** - Troubleshooting, server report, software version, Axis online services, contact information, etc.
 - **Help Contents** - Displaying general help information.
 - **External Link** - Optional link to a Web site on the Internet or your company's intranet.
- Notes:**
- o You can prevent users from accessing the volumes via the Web interface by disabling the Enable access to volumes via Web browser (HTTP) parameter on the Network Settings - Web (HTTP) page.
 - o Context sensitive online help is available from all the StorPoint CD+ Web pages. To access help for a specific page, click Help .

Shutting Down the StorPoint CD+

If you need to shut down the StorPoint CD+ after the installation, make sure it is shut down safely otherwise you risk losing data. Do NOT turn off the power before the StorPoint CD+ has been shut down.

You can shut down the StorPoint CD+ via its Web interface or by editing the `config.ini` file.

- Via the Web Interface**
1. On the Server Settings page, click the **Shutdown Server** button.



2. Click OK in the confirmation dialog.

Your StorPoint CD+ will shut down and you can now turn off the power.

- Via the config.ini File
1. Locate the `config.ini` file using your standard file manager tool. You will find it in the `Root/System/ServerProperties` folder.
 2. Use your preferred text editor and change the `Shut Down` parameter to `yes`. You will find the `Shut Down` parameter under the `[Server]` section.
 3. Save the `config.ini` file.

Your StorPoint CD+ will now shut down and you can then turn off the power.

Server Password

To protect the system files, it is important that you set the Server password. The Server password is used in basically all protocols, i.e. HTTP, NetWare (NCP), Windows (SMB), Macintosh (AFP), SNMP and FTP. For example, a user will be prompted for the Server password when trying to access the Administration Web pages for the first time during a session.

By default, the Server password is set to `pass`.

To set the Server password, follow these steps:

1. On the Server Settings page, click **Change...** to open the Server Settings dialog box.
2. Open the General page.
3. Specify and confirm the Server password.
4. Click **Close**.

- Note:**
- o If you lose the Server password, you must restore the factory default settings. See "*Restoring Factory Default Settings*" on page 130.

Date & Time

1. On the Server Settings page, click the Server icon and then Change... to open the Server Settings dialog box.
2. Open the Date & Time page.
3. Specify the time zone in which the StorPoint CD+ operates. Refer to "*Time Zone Parameter Values*" on page 120.
4. To set the time using a time synchronization source, choose **Automatically** and specify the time source:

Network environment	Time Source:	You must also specify the ...
NetWare IPX	Novell Directory Services (NDS)	Time Source parameter on the Network Settings NetWare page: - SAP or - List of server names.
NetWare PureIP NetWare/IP	Novell Directory Services (NDS)	Time Source parameter on the Network Settings NetWare page: - List of server names or IP addresses.
TCP/IP	Network Time Protocol (NTP) *	NTP Server parameter on the Server Settings Date & Time page: - Name or IP address of the time server.
Windows NT/2000 domains	Microsoft Windows NT/2000 Network (SMB)	

* **Note:** NTP is not natively supported by Windows NT servers. You will need third party software.

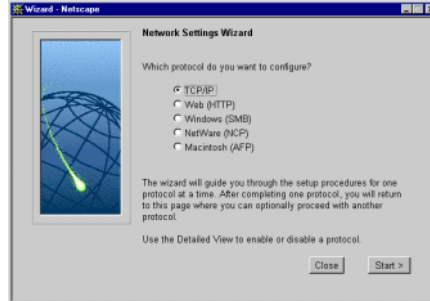
To set the time manually, choose **Manually** and specify the date in `yyyy-mm-dd` format, and time in `hh:mm:ss` format using the 24 hour clock.


5. Click **Save** to save your settings.


TCP/IP

The installation wizard is a convenient way to specify the Internet-related settings for your StorPoint CD+.

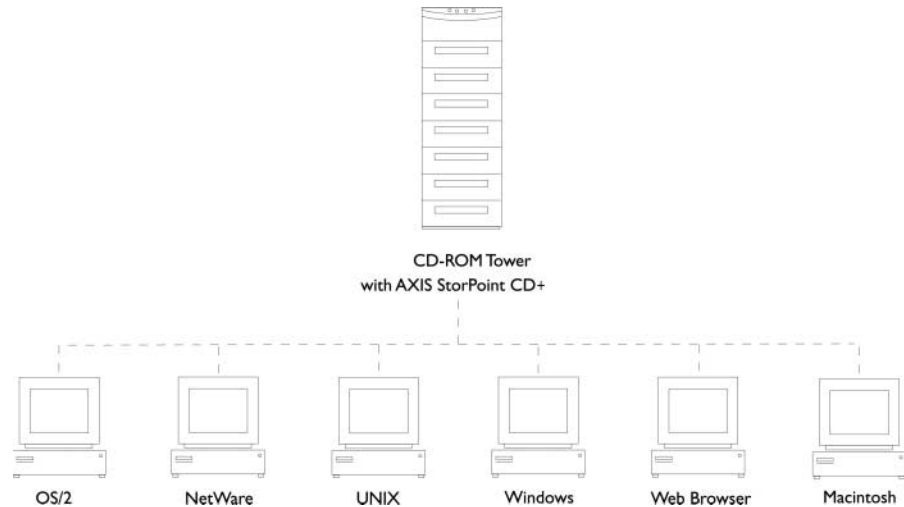
1. Click **Network Settings**.
2. Click **Wizard** . The **Network Settings Wizard** dialog appears.



3. Choose **TCP/IP**. Click **Start** to proceed with the installation.
4. Follow the instructions on the screen. When finished, click **Close**.
5. Click **Detailed View** . The **Protocols** dialog box appears.
6. Select the **TCP/IP** tab and verify the settings.
7. Click **OK**.

- Notes:**
- o Context sensitive online help  is available for all parameters.
 - o The parameter list is described in detail in "*Parameter List*" on page 115.

Section 3 Microsoft & IBM Networks (SMB)



This section outlines the required configuration settings for running the StorPoint CD+ in the Microsoft and IBM (SMB) network environment, i.e. Windows 95/98/NT4/Me, Windows 2000/XP or OS/2. It also describes how to set up access restrictions.

If you are using the StorPoint CD+ in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- “*NetWare (NCP)*” on page 43
- “*UNIX (NFS)*” on page 66
- “*Macintosh (AFP)*” on page 71
- “*FTP (File Transfer Protocol)*” on page 78
- “*Web Browser (HTTP)*” on page 81

Network Settings

You do not have to specify any specific settings before you can use the StorPoint CD+ in the Windows (SMB) environment. However, we recommend that you change some of the default settings, e.g. the SMB server name. You can use the Administration web pages to configure the StorPoint CD+.

SMB Server Name

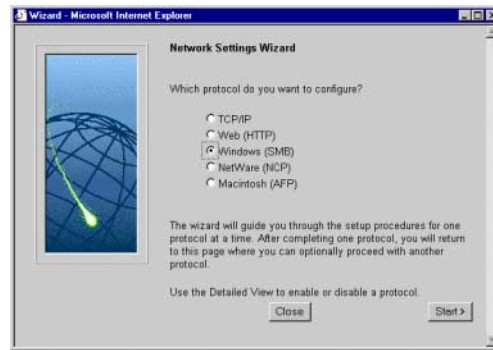
The default SMB server name is AXIS<nnnnnn>, where <nnnnnn> are the last six digits of the StorPoint CD+ serial number. This is the name that will be presented to the Windows clients on the network. You can change that name by editing the SMB Server Name parameter.


Recommendation!


Choose a more descriptive name for your server, e.g. CD_Server.

<u>SMB Protocols</u>	<p>SMB is a protocol that make use of NetBIOS. NetBIOS can be used over several different network protocols. The StorPoint CD+ supports the following transport methods:</p> <ul style="list-style-type: none">• SMB over NetBIOS/TCP/IP (NBT) - max 1000 users• SMB over NetBIOS/NetBEUI - max 300 users <p>Both protocols are enabled by default. However, you can disable the protocols by setting the appropriate configuration parameters.</p>
<u>Access Control</u>	<p>Access control is used for restricting access to the shared discs in the StorPoint CD+. In the Windows (SMB) environment you can select whether you want to use user-level or share-level access control.</p>
User-level Access Control	<p>User-level access control allows you to define rights for discs/volumes for each individual logged in user. The StorPoint CD+ will act as an “NT4/2000 member server” in the domain and verify the user’s identity and group memberships against a domain controller on the network. The advantages with this method are:</p> <ul style="list-style-type: none">• The user is not required to answer to password prompts every time he/she needs to access a protected disc or a volume.• The network administrator can administer the access rights for discs and volumes using the standard administration tools in Windows NT/2000.• The network administrator can use the native user groups in the domain to set basic security.
Share-level Access Control	<p>Share-level access control is based on different passwords for different shared discs/folders. No verification with domain controllers will take place. This is a good method to use in smaller “workgroup based” networks when there is no domain controller.</p>
Recommendation!	<p>User-level access control is the preferred method to use in Windows NT/2000 server based networks.</p>
<u>Wizard</u>	<p>The installation wizard is a convenient way to set up your StorPoint CD+ for your Windows (SMB) environment and it will guide you through the following:</p> <ul style="list-style-type: none">• Defining your server name and the workgroup/domain you want your StorPoint CD+ to appear in.• Defining how you want to control access to shared resources. <p>To run the Wizard follow the steps outlined below:</p> <ol style="list-style-type: none">1. Start your web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.2. Click admin. You will be prompted for the Server password. By default, this is set to <code>pass</code>. To change the Server password, see “<i>Server Password</i>” on page 24.3. Click Network Settings.

4. Click **Wizard** . The **Network Settings Wizard** dialog appears.



5. Choose **Windows (SMB)**. Click **Start** to proceed with the installation.
6. Follow the instructions on the screen. When finished, click **Close**.
7. Click **Detailed View** . The **Protocols** dialog box appears.
8. Select the **Windows (SMB)** tab and verify the settings.
9. Click **OK**.

- Notes:**
- o Context sensitive online help  is available for all parameters.
 - o The parameter list is described in detail in "*Parameter List*" on page 115
 - o When creating a computer account in the domain, the administrator's user name and password will be saved by the StorPoint CD+ to enable the StorPoint CD+ to authenticate the users who log on. After the account has been created, these parameters can be changed in the configuration file (config.ini). When viewing the configuration file, the password will not be visible in clear text.

Access Control


The procedures for managing shares depends on the security mode you are using:

- User-level access control in Windows NT/2000 networks
- User-level access control in OS/2 networks
- Share-level access control

Verifying the Security Mode

To verify the security mode setting, follow these steps:

1. Start your web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.
3. Click **Network Settings**.

4. Click **Detailed View** . The Protocols dialog box appears.
5. Select the **Windows (SMB)** tab. If you want to change the Security Mode parameter, click **Change...**
6. Click **OK**.

Managing Shares in User-level Access Control


The system files are protected by default. All users that belong to the administrator groups in the domain have administrator rights on the StorPoint CD+. All members of the domain have permissions to read and execute files on all the discs.

Important!

- o You cannot use Server Manager in Windows NT to manage the shares on the StorPoint CD+.

Defining Shares

By default, all new discs are shared automatically. If you want to change a share, i.e. remove it or change the name, follow these steps:

1. Start your web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "Server Password" on page 24.
3. Click **Disc & Drives**.
4. Locate the resource you want to share, and click **Properties** . The **Properties** dialog box appears.
5. Open the **Windows Sharing** page.



6. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
7. Select the **Share as** radio button, and enter a name in the **Share Name** field.
8. Enter a comment in the **Comment** field.
9. Click **OK**.

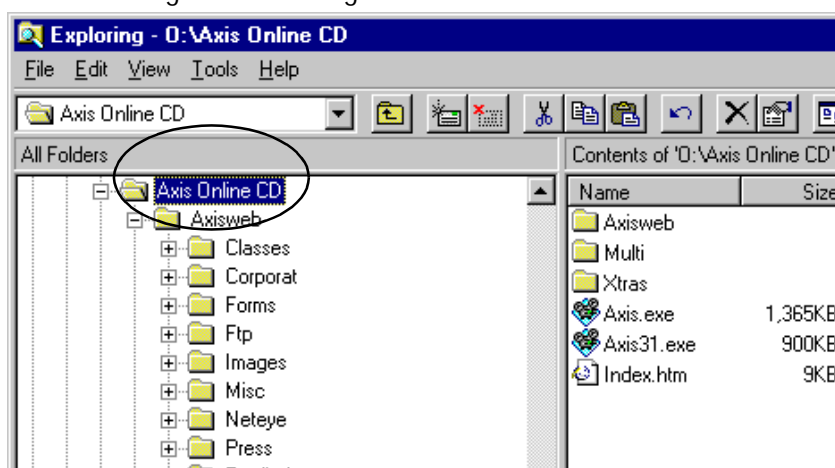
Managing Access Rights in Windows NT/2000/XP Environments

In Windows NT/2000/XP environments, access rights are managed from the Windows NT/2000/XP Explorer. It is not possible to manage access rights from the Windows 95/98 Explorer or from the StorPoint CD+ web interface.

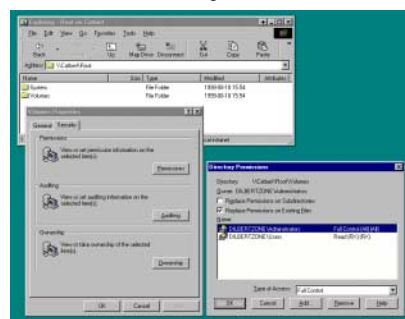
- Notes:
- o The access rights are additive which means that the user's access rights are the summary of the rights granted from individual assignments and group memberships.
 - o Files and subfolders on the disc will automatically inherit the same access rights as the root folder.

Follow these steps:

1. In the Windows NT/2000 Explorer, select the disc or volume for which you want to change the access rights.



2. Select Properties from the File menu.
3. Select the Security tab, and (Windows NT only) click the Permissions button.




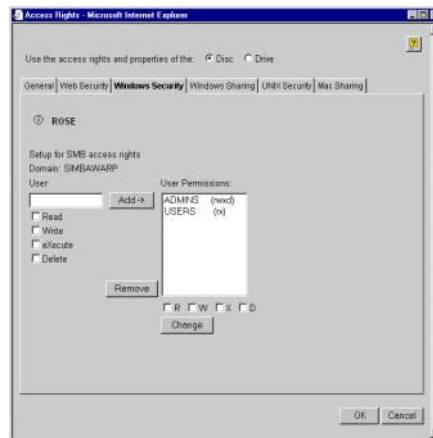
4. Specify the permissions.
5. Click OK.

- Note:
- o Access rights work as in any other Windows NT4/2000 Server. The built-in help in Windows NT4/2000/XP is a good place to start learning more about NT/2000/XP security. See access permissions in the Windows help system.

Managing Access Rights in OS/2 Environments

To manage access rights in OS/2 environments, follow these steps:

1. Start your web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.
3. Click **Discs & Drives**.
4. Locate the resource you want to share or protect in the file tree, and click **Properties** . The Properties dialog box appears.
5. Open the **Windows Security** page.




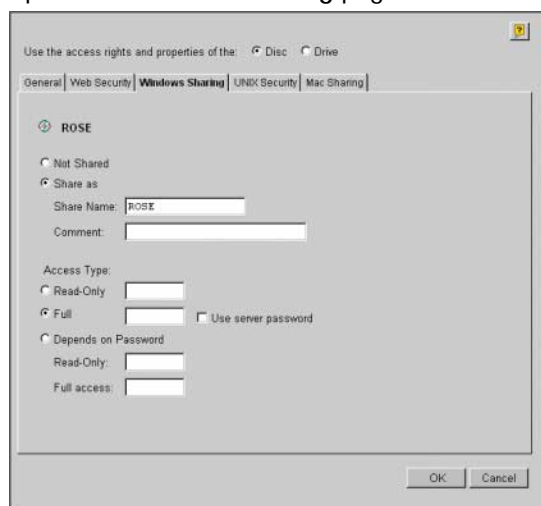
6. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
7. Add permissions for the users and groups you want to grant access.

- Notes:**
- o Files and subfolders on the disc will automatically inherit the same access rights as the root folder.
 - o The access rights are additive which means that the user's access rights are the summary of the rights granted from individual assignments and group memberships.
8. Click **OK**.

**Managing Shares
in Share-level
Access Control**

By default, all new discs are shared automatically. If you want to change a share, i.e. remove it or change the name, follow the procedure outlined below:

- Note:**
- o Macintosh HFS CD-ROM:s are not shared automatically. This can be defined via the web interface.
1. Start your web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
 2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.
 3. Click **Disc & Drives**.
 4. Locate the resource you want to share or protect in the file tree, and click **Properties** . The Properties dialog box appears.
 5. Open the **Windows Sharing** page.



6. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
7. Select the **Share as** radio button, and enter a share name in the **Share Name** field.
8. Specify the type of access you want the user to have:
 - **Read-Only** to enable users to open and copy documents.
 - **Full** to enable users to change, add and remove files.
 - **Depends on Password** to allow different types of access. Note that you must specify both password fields, otherwise the users will not be prompted for any password.
9. Click **OK**.

Accessing the Discs

The StorPoint CD+ makes your networked CD/DVD-ROMs available to anyone who has the appropriate privileges on the network. Users will access the StorPoint CD+ just as any other workstation or file server.

The way you access the StorPoint CD+ resources depends on your network environment:

Network environments	See ...
Windows 95/98/ME & Windows NT/2000/XP	page 36
OS/2 Warp 4	page 38
IBM Peer for OS/2	page 38
DOS	page 40

- Notes:
- o The examples will assume that you have not changed the default server name. The default server name is `AXIS<nnnnnn>` where `<nnnnnn>` are the six last digits of the StorPoint CD+ serial number. If you have changed the server name, use the new name where the examples refer to the default name.
 - o Depending on the access rights set up by the Administrator, you might be prompted to supply a password or receive a message similar to 'Access is denied' when trying to access a shared resource on the StorPoint CD+. The default Server password is `pass`.
 - o In the Windows 95/98/ME and Windows NT 4/2000/XP environments, you can install the AXIS StorPoint Disco utility, which is a powerful Windows application for locating and using CD/DVD-ROMs located on AXIS storage servers, wherever they are on your network. Refer to "*AXIS StorPoint DISCO*" on page 91.

General Disc Settings

To specify the general settings for an inserted disc, follow these steps:

1. Start your web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`.
3. Click **Discs & Drives**.
4. Locate the desired disc.

5. Click **Properties** . The **Properties** dialog box appears:

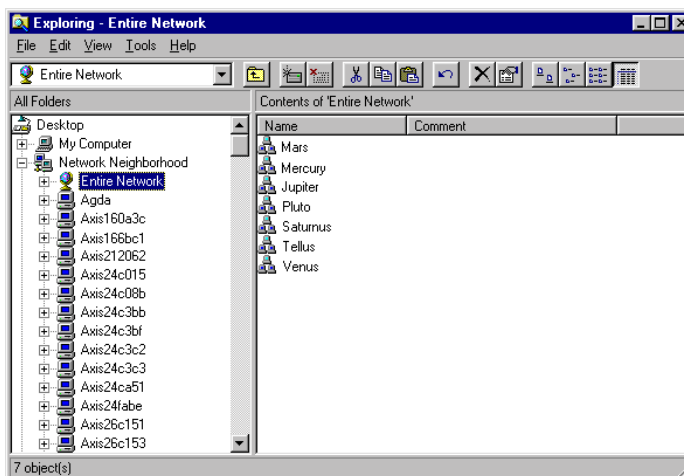


6. Select the **General** tab. You can specify the following settings:
 - **Name** - The volume name that will be presented to the clients. If left blank, the volume label will be used.
 - **Description** - The description that will be displayed in Windows Explorer.
 - **User Limit** - The number of users that will have access to the disc. To disable this function, enter the value 0 into this field.
7. Click **OK**.

Windows 95/98
Windows NT 4
Windows 2000/XP

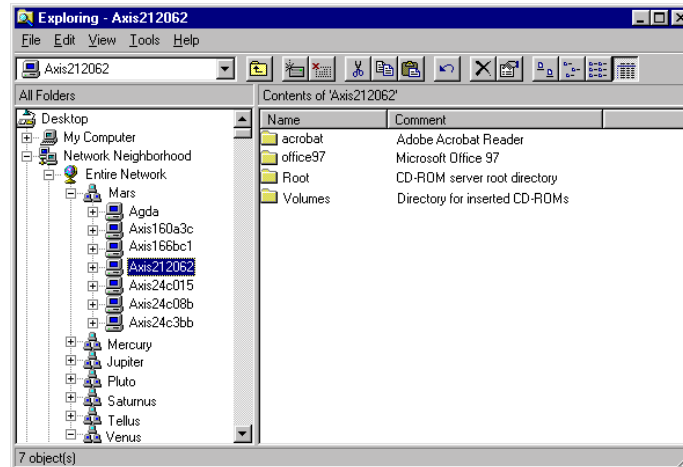
Follow these steps:

1. Start the Windows Explorer.
2. Expand the **Network Neighborhood/My Network Places** icon.
3. Expand the **Entire Network** icon. By default, the **StorPoint CD+** appears in the folder that comes first when sorted by name. If the **Domain Name** is already set, the **StorPoint CD+** will appear in the specified folder.



- Notes:
- o Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.

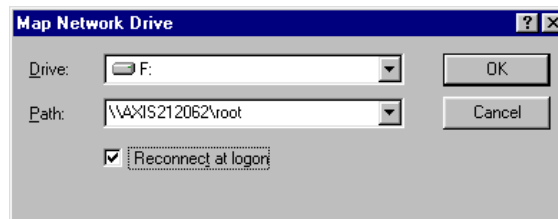
- o If you cannot find the StorPoint CD+ under Entire Network, refer to "*Alternative Method*" on page 37.
- 4. Double click the entry for your StorPoint CD+. The default name is Axis<nnnnnn>, where <nnnnnn> are the six last digits of the StorPoint CD+ serial number.



- 5. To map one of the StorPoint CD+ resources, locate:
 - Root for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. office97
- 6. Right click the resource and select Map Network Drive...
- 7. Select a drive letter for your StorPoint CD+.
- 8. Check Reconnect at logon if you wish to use the resource under the same drive letter the next time you start your computer.
- 9. Click OK. The StorPoint CD+ is ready for use.

Alternative Method If you cannot find the StorPoint CD+, follow these steps:

- 1. Start the Windows Explorer from the Start menu.
- 2. From the Tools menu, select Map Network Drive...

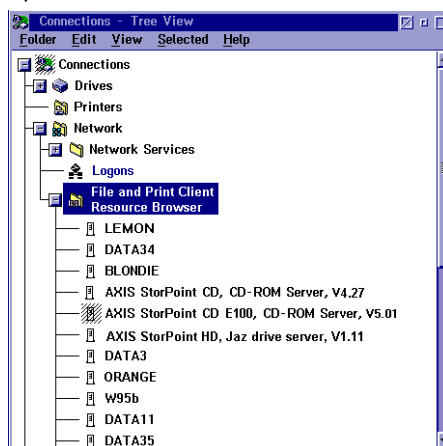


- Notes:**
- o Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.
 - 3. Select a drive letter.
 - 4. In the path box, type \\AXIS<nnnnnn>\root, where <nnnnnn> are the six last digits of your StorPoint CD+ serial number.

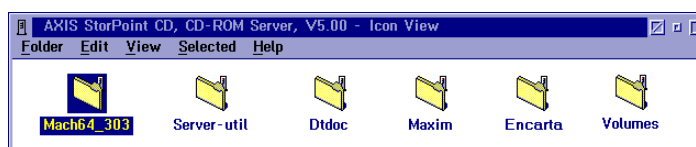
5. Check Reconnect at logon if you wish to use the resource under the same drive letter the next time you start your computer.
6. Click OK. The StorPoint CD+ is ready for use.

OS/2 Warp 4

1. Double click the Connection icon.
2. Open Network, File and Print Client Resource Browser.



3. Double click your StorPoint CD+.

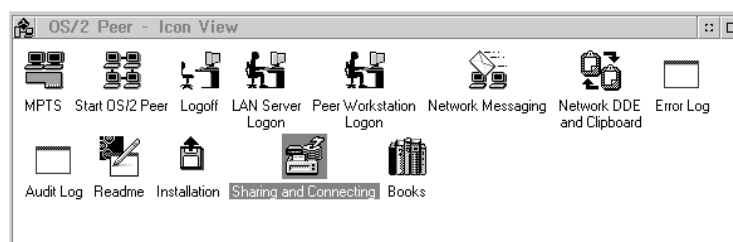


4. Select the resource you want to map to a drive letter.
5. From the Selected menu, select Assign drive.

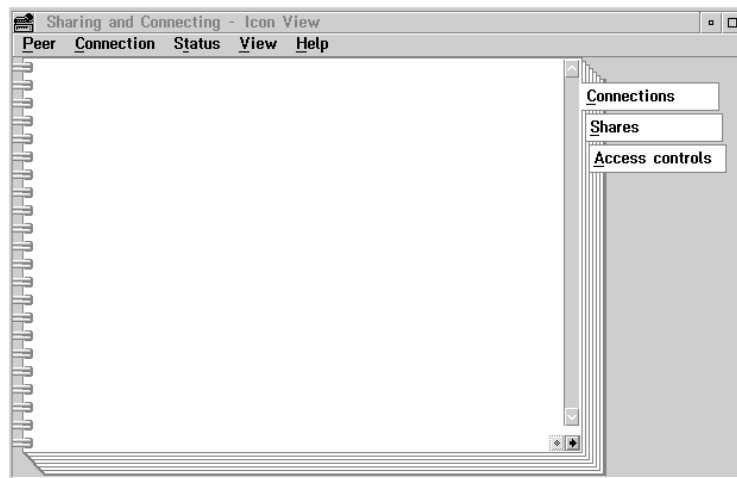
IBM Peer for OS/2

Make sure you have IBM Peer for OS/2 installed. If not, see the instructions in "*Alternative Method*" on page 40.

1. Double click the OS/2 Peer icon. The Peer window is displayed:

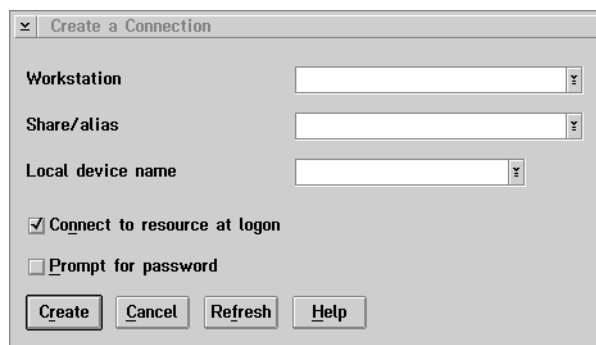


2. Double click the Sharing and Connecting icon to open this window:



Any active connections you have will be listed in the window.

3. From the Connection menu, select Create. This dialog is displayed:



4. In the Workstation field, type AXIS<nnnnnn>, where <nnnnnn> are the last six digits of your StorPoint CD+ serial number.
5. In the Share/alias field enter the StorPoint CD+ resource:
 - Root for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. acrobat
6. In the Local device name field, select a drive letter for your StorPoint CD+.
7. Click Create. The StorPoint CD+ is ready for use.

- Note:
- o The StorPoint CD+ folders will not be visible on the Desktop in OS/2 versions prior to OS/2 WARP Connect. If you wish to use an earlier version of OS/2, we recommend using third party NFS software to connect to the StorPoint CD+.

- Alternative Method** If you do not have Peer for OS/2, you can map the StorPoint CD+ to a drive letter using the `net use` command. Follow these steps:
1. Open an OS/2 window.
 2. Use the `net use` command to mount the StorPoint CD+. At the OS/2 prompt, type:
`net use <drive letter>: \\AXIS<nnnnnn>\<folder>`
where `<nnnnnn>` are the six last digits of your StorPoint CD+ serial number and `<folder>` is any shared StorPoint CD+ folder.
 3. To make the connections permanent, create or edit your `startup.cmd` file to include your `net use` commands.

DOS Follow these steps:

1. At the DOS prompt, type:

```
net use <drive letter>: \\AXIS<nnnnnn>\<folder>
```

or:

```
net use <drive letter>: \\<IP address>\<folder>
```

where `<nnnnnn>` are the six last digits of your StorPoint CD+ serial number and `<folder>` is the StorPoint CD+ folder you want to map.

2. To make the connections permanent, edit your `autoexec.bat` file to include your `net use` commands.

Example 1 (Root level access):

To access the root level of your StorPoint CD+ with serial number 00408C18025C under the drive letter E, type:

```
net use E: \\AXIS18025C\root
```

Example 2 (Volumes folder access):

If your StorPoint CD+ serial number is 00408C18025C, and you want to be able to access all the discs under the drive letter F, type:

```
net use F: \\AXIS18025C\volumes
```

Example 3 (Disc access):

If your StorPoint CD+ serial number is 00408C18025C, and you want to map a disc named 44018881 to drive G, type:

```
net use G: \\AXIS18025C\44018881
```


- Notes:
- o If you are using DOS within Windows 95 or Windows NT 4, and you wish to access files or directory names longer than 8 characters, you will need to precede these long names with a quote mark ("). For example, to change to the directory called Product Information:

```
G:\AXIS18025C\VOLUMES\>CD "PRODUCT INFORMATION"
```

- o Windows NT gives the additional facility of using the * wildcard. For example, a quick way of changing to the Product Information directory would be:

```
G:\AXIS18025C\VOLUMES\>CD "PRODUCT*"
```

Asian Languages

The StorPoint CD+ supports double-byte character encoded discs. The supported languages are: Simplified Chinese, Traditional Chinese, Japanese and Korean.

Global Setting

If you want all discs to be displayed in a certain Asian language, you can define this from the **Server Settings** page.

1. Click the **Server** icon.
2. Click **Change...**, and select the **Asian Languages** tab.




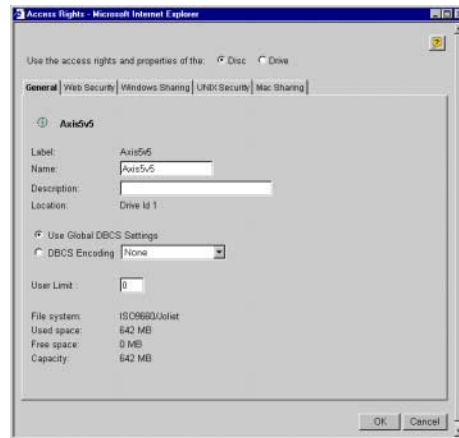
3. Select the required language from the **DBCS Encoding** drop-down list, and click **OK**.

- Note:
- o DBCS stands for Double Byte Character Set, and is by default set to None.

Local Setting

If you only want to display some discs in an Asian language, or if you have discs in more than one Asian language, you can define this individually per disc/drive from the **Discs & Drive** page.

1. Select the required disc from the Discs and File System view, and click **Properties** .



2. Select the required Asian language from the **DBCS Encoding** drop-down list, and click **OK**.

Note: o It is also possible to specify an Asian language for the root folder in order to display virtual folders in a certain Asian language in Windows SMB.

Section 4 NetWare (NCP)

This section outlines the required configuration settings for running the StorPoint CD+ in the Novell NetWare environment, how to set up access restrictions and accessing the discs.



The StorPoint CD+ supports a maximum of 1000 users in NetWare.

If you intend to use StorPoint CD+ in a multiprotocol environment, proceed to the other relevant sections in this manual, namely:

- *“Microsoft & IBM Networks (SMB)”* on page 27
- *“UNIX (NFS)”* on page 66
- *“Macintosh (AFP)”* on page 71
- *“FTP (File Transfer Protocol)”* on page 78
- *“Web Browser (HTTP)”* on page 81

Network Settings

The StorPoint CD+ emulates both a 4.x and a 5.x NDS server and a NetWare 3.x bindery server. It also supports NetWare/IP and PureIP. In NetWare 5 and NetWare 6 environments, the StorPoint CD+ can be integrated as any other 5.x server simultaneously accessed via IPX, NetWare/IP and PureIP.

If your network supports TCP/IP, you can use the Administration Web pages to configure the StorPoint CD+.

NetWare Server Name The default NetWare server name is AXIS<nnnnnn>_NW, where <nnnnnn> are the last six digits of the StorPoint CD+ serial number. This is the name that will be presented to the NetWare clients on the network. You can change that name by editing the NetWare Server Name parameter.

Recommendation! Choose a more descriptive name for your server, e.g. CDServer.

Time Synchronization Make sure you specify the time synchronization source properly. Refer to *“Date & Time”* on page 25.

**Installation as an
NDS Server**

If used as an NDS server, the StorPoint CD+ must first be installed in the NDS tree. The most convenient way to do this is using the installation wizard available from the StorPoint CD+ Web interface, see "*Wizard*" on page 44.

However, if you do not have a TCP/IP environment, you must use a text editor and edit the configuration file manually. Refer to "*Text Editor*" on page 45.

- Important!**
- o If you change any of the following parameters after installing the StorPoint CD+ in the NDS tree, you might need to repeat the installation:
 - IP address
 - Internal Net Address
 - IPX Enable
 - PureIP Enable
 - NetWare/IP

Requirements When installing the first StorPoint CD+ into the NDS tree, you must use an account with Supervisor rights for the [Root] of the tree.

The StorPoint CD+ will extend the NDS schema with a new attribute called `AXIS:SPcd:rights` which will be added to the NCP Server class. The extension is needed for storing file system access rights.

The new attribute will not affect the operation of your NetWare servers. The schema extension has been approved by Novell as part of the YES certification of this product.


- Notes:**
- o Adding the schema extension requires Supervisor rights to the [Root] object of the NDS tree.
 - o If you do not have Supervisor rights to [Root] or if schema extensions are not allowed in your NDS tree, you can store the access rights in a file on a NetWare file server. However, you must specify the NDS Rights Storage and NDS Rights File parameters properly. You will need Supervisor rights to the Organizational Unit (OU). After the NDS installation, you must create and assign access rights to the directory on the NetWare file server where the file is stored.

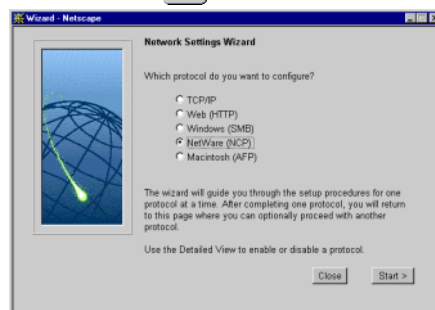
For subsequent installations, Create rights to the context where you want to install the StorPoint CD+ will be sufficient.


Wizard The installation wizard is a convenient way to install your StorPoint CD+ in the NetWare environment.


1. Verify that the NDS tree is synchronized. To do that, you load `DSREPAIR.NLM` on a NetWare server console in the NDS tree and select `Unattended full repair`.

- Important!**
- o If the NDS tree is not synchronized, do not continue the installation until you have solved the problem.

2. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
3. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see "*Server Password*" on page 24.
4. Click **Network Settings**.
5. Click **Wizard** . The Network Settings Wizard dialog appears.



6. Choose **NetWare (NCP)** to set up the StorPoint CD+ for your NetWare clients. Click **Start** to proceed with the installation.
7. Follow the instructions on the screen. When finished, click **Close**.
8. Click **Detailed View** . The Protocols dialog box appears.
9. Select the **NetWare (NCP)** tab and verify the settings.
10. Click **OK**.
11. Restart your StorPoint CD+.

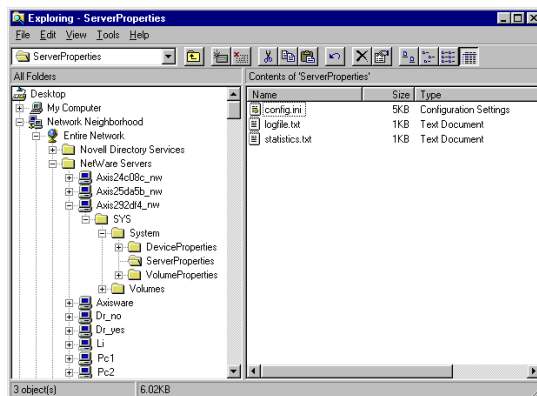
- Notes:**
- o Online help  is available for all parameters.
 - o The parameter list is described in detail in "*Parameter List*" on page 115.

Text Editor If you do not have TCP/IP on your network, follow these steps to install the StorPoint CD+ as an NDS server:

1. Login as Supervisor in bindery mode.
2. Verify that the NDS tree is synchronized. To do that, you load `DSREPAIR.NLM` on a NetWare server console in the NDS tree and select `Unattended full repair`.

- Important!**
- o If the NDS tree is not synchronized, do not continue the installation until you have solved the problem.

- Use a standard text editor such as Notepad to edit the configuration parameters. From Windows Explorer or File Manager, locate the StorPoint CD+ configuration file, `config.ini` which is located in the `System/ServerProperties` folder.



- Enter the appropriate settings for these parameters:

Parameter name	Value	Description
[Server]		
TimeZone	=	Must be set to the correct time zone that the StorPoint CD+ is operating in. See "Time Zone Parameter Values" on page 120.
TimeSyncSource	= NDS	Set to <i>NDS</i> to enable the StorPoint CD+ to get its time from the NetWare network.
[NetWare]		
NWEnable	= yes	Enables NetWare support.
IPXEnable	= yes	Set to <i>yes</i> to enable the IPX protocol.
NetWareIP_Enable	= no	Enables NCP over IPX/UDP (NetWare/IP).
PureIPEnable	= yes	Set to <i>yes</i> to enable PureIP for non-TCP/IP networks.
ServerName	=	NetWare server name to be presented to the NetWare clients. Default is <i>AXIS<nnnnnn>_NW</i> where <i>nnnnnn</i> are the last six digits of the serial number.
NDSEnable	= yes	Must be set to <i>yes</i> to enable the NDS login.
NDS_TreeName	=	The name of the tree where you want to install the StorPoint CD+, e.g. <i>MEDCORP</i>
NDS_ServerContext	=	The distinguished name of the context in the NDS tree where you want to install the StorPoint CD+, e.g. <i>Manufacturing.Medtec</i>
NDS_AdminName	=	The distinguished name of a user or administrator with Supervisor or Create rights to the context where you want to install the StorPoint CD+, e.g. <i>Admin.Medtec</i> Note: Do not enter a dot in front of the distinguished name even if prompted for one.
NDS_AdminPassword	=	The password of the administrator entered in NDS_AdminName shown above.
NDS_Install	= install	Change this to <i>install</i> when you are ready to install the StorPoint CD+. The setting <i>forced</i> will overwrite the existing server object without warning.
NDS_RightsStorage	= NDS	Set to <i>NDS</i> to store the access rights in the NDS tree. Set to <i>File</i> to store the file system access rights in a file on a Netware server. This is necessary if you do not allow schema extensions in your NDS tree, or if you do not have Supervisor access rights. Set to <i>Local</i> to store the access rights locally on the StorPoint.

NDSRightsFile	=	If storing the access rights in a file on the Novell file server, specify the whole path to the file, e.g. <i>CORPSERVER/SYS:CDSERVER/CDSRV.DAT</i> The specified directory must exist and the StorPoint CD+ must have Read, Write, Create, Erase, Modify and File Scan rights. The StorPoint CD+ will create the file once you start adding trustees.
TimeSyncSources	= SAP	Default is <i>SAP</i> for the network agreed time. Use <i>SAP</i> with IPX and IP address or <i>DNS</i> name for PureIP. Alternatively, enter a list of server names to be contacted for time synchronization.

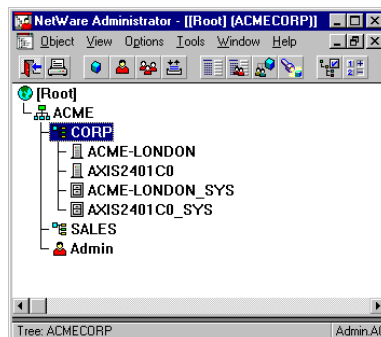
Example (NDS settings):

The StorPoint CD+ is placed in Eastern United States. The name of your NDS tree is ACMECORP, the name of the context where you wish to install the StorPoint CD+ is Corp.Acme, and the administrator's name is Admin.Acme. Specify these parameters:

```
[Server]
TimeZone           = US_CAN_Eastern
TimeSyncSource     = NDS
...
[NetWare]
NWEnable           = yes
IPXEnable          = yes
NetWareIP_Enable  = yes
PureIPEnable       = no
ServerName         = AXIS<nnnnnn>_NW
NDSEnable          = yes
  NDSTreeName      = ACMECORP
  NDSServerContext = Corp.Acme
  NDSAdminName     = Admin.Acme
  NDSAdminPassword = secret
  NDSInstall       = install
  NDSRightsStorage = NDS
  TimeSyncSources  = SAP
```

5. Save the `config.ini` file to start the NDS server installation. The installation takes about 15 seconds, after which users will be able to access the StorPoint CD+ in NDS mode.
6. Check the `logfile.txt` file to verify that the StorPoint CD+ was successfully installed. See "*Installation Errors in NetWare NDS*" on page 49.
7. Restart your StorPoint CD+ after the installation.
8. After the installation you must logout and then login again to have all the necessary rights on the StorPoint CD+ server object and the associated volume.

Using the NWAdmin, you will find a new server object and corresponding volume object in the context you chose above.



The StorPoint CD+ installed in the NDS Tree

- Note:
- o You can display Details in NWAdmin to verify the syntax of the `NDSServerContext` and `NDSAdminName` parameters.

Installation Errors in NetWare NDS

If you experience problems when installing your StorPoint CD+ in a NetWare NDS network, errors that occur will be written to a file named `logfile.txt` located in the `System/ServerProperties` folder. You can display the log file on the Event Log page within the StorPoint CD+ Web interface.

This table comprises a summary of error messages:

Error	Description
Installation failed: NDS tree not found	The server could not find the NDS tree. Verify the spelling.
Installation failed: Administrator object missing	The server could not find the user object specified in the <code>NDSAdminName</code> parameter. Verify that you use the correct format, e.g. <code>admin.acme</code> . Verify the spelling.
Installation failed: Administrator password is incorrect	The password supplied in the <code>NDSAdminPassword</code> parameter could not be used to login as the user in the <code>NDSAdminName</code> parameter. Verify the spelling.
Installation failed: Server context not found	The context specified in the <code>NDSAdminContext</code> parameter was not found. Verify the spelling.
Installation failed: Insufficient rights to create server object	The specified user in the <code>NDSAdminName</code> parameter does not have sufficient rights to create the server object in the specified context.
Installation failed: NDS Server object already exists	You have tried to install the server on top of an existing server object. Set the <code>NDSInstall</code> parameter to <i>forced</i> to overwrite the existing object.
Installation warning: Could not extend NDS Schema. User xxxxx doesn't have SUPERVISOR rights to the [Root] object.	The administrator who is trying to install the server has insufficient rights for adding the schema extension. Specify a <code>NDSAdminName</code> with Supervisor rights to the [Root] object.
Installation warning: Could not extend NDS Schema (class 1)	These errors are the result of insufficient rights of the administrator trying to install the server. Specify a <code>NDSAdminName</code> with Supervisor rights to the [Root] object.
Installation warning: Could not extend NDS Schema (class 2)	
Installation warning: Could not extend NDS Schema (attribute)	

Installation as a Bindery Server

If used as a bindery server, no specific installation is required prior to using and accessing the StorPoint CD+. However, it is recommended that you specify the authentication server.

Access Control

The way you manage security in NetWare depends on the mode you are using:

- NDS mode
- Bindery mode without user authentication
- Bindery mode with user authentication

The StorPoint CD+ acts as a normal NetWare file server, which means that you use standard tools such as ConsoleOne, NWAdmin, SYSCON and Filer for handling security.

- Note:
- o You cannot set up access restrictions for the NetWare environment via the StorPoint CD+ Web interface.

Access Restrictions in NetWare NDS

In NetWare, access rights for users in bindery mode is separate from users accessing the StorPoint CD+ in NDS mode. For this reason, we recommend that you disable bindery mode after you have successfully installed the StorPoint CD+ in NDS and thus allow users to log on in NDS mode only.

- Note:
- o If NDS mode is not functioning, you can always access the StorPoint CD+ in bindery mode by logging in as Supervisor. This is true even if you have disabled bindery mode.

Default Access Rights

The default access rights protect all the system files, which means that only users with Supervisor privileges on the StorPoint CD+ have access to those files. However, all users logged into NDS can access the discs. These access rights are set up by the following trustee assignments:

- All users who have NDS Supervisor privileges to the StorPoint CD+ server object, will have supervisor rights to the StorPoint CD+ filesystem.
- The root of the SYS volume has [Public] as trustee, with File Scan, Read, Write, Create, Modify and Erase rights.
- The System folder has all rights, except Supervisor, filtered. Thus all system files are effectively protected from normal users.

- Notes:
- o If the default security is satisfactory to your system, simply do not change anything.
 - o You can change the default trustee assignments using NWAdmin.

Setting Security Rights in NetWare NDS

Because the StorPoint CD+ acts as a normal NDS file server, its NDS security rights can be set using standard procedures, e.g. ConsoleOne or NWAdmin.

To make **all the discs** available to some users only, follow these steps:

1. Login using an account with Supervisor rights.
2. Start the NWAdmin.
3. Remove the [Public] trustee from the root of the SYS volume.
4. Add the new trustee assignments to the root of the SYS volume.

To restrict access to a **particular disc**, follow these steps:

1. Login using an account with Supervisor rights.
2. Start the NWAdmin.
3. On the resource you want to protect, set an inherited rights filter and filter ALL rights.
4. Add the new trustee assignments to the resource. This makes it available only to the users in the trustee list.

- Note:**
- o The NetWare NDS access rights for the StorPoint CD+ can be set using Security Equivalence, Group, Container, Organization role, and User Objects as with any other NDS file server. There is no difference between how you use NWAdmin to set these access rights for a StorPoint CD+, and how you would set the access rights on an NDS file server.

NetWare Bindery Without Authentication

If user authentication is not required, you do not have to specify an authentication server. The Supervisor can login using the Server password. Other users can login without password and will be considered to belong to the EVERYONE group.

No NetWare server licenses are required since the StorPoint CD+ does not log on to the file server.

If needed, you can use your standard NetWare administration tool, e.g. Filer, to limit access to the StorPoint CD+ system files to the Supervisor. Unauthorized users will still have guest access to the volumes. This is normally sufficient security for a StorPoint CD+.

NetWare Bindery With Authentication

If user access control is required, you must specify an authentication server in the Bind Authentication parameter. The StorPoint CD+ will need to log on to the authentication server in order to authenticate the user and read which groups the user belongs to. In this case, the authentication server must have a standby license for the StorPoint CD+. However, several StorPoint CD+ servers can share this license.

- Important!**
- o If "Station Restrictions" are used on the Novell server used for authentication, each user who wants to access the StorPoint CD+ need at least two concurrent connections to the authentication server.

If a license is not available, the user will still be authenticated but group information cannot be read.

The authenticated users can access the discs according to the access rights set up by the Administrator.

The authentication procedure will not introduce any extra administrator overhead as there is no need for maintaining a separate user database for the StorPoint CD+. If the user is defined in the file server that the StorPoint CD+ uses for authentication, the user will automatically have access to the StorPoint CD+.

Authentication to a NetWare 3.x Server

For access to a StorPoint CD+ connected to a NetWare 3.x server, authentication is done against the user list in the bindery of the NetWare server:

- If a user is on the list, the password will be verified. If the password is correct, the user will be granted access.
- If the password is incorrect, login will fail.

If a user is not on the list, he will not be granted access to the StorPoint CD+. However, he could login as 'guest' and get access to volumes that are not protected.

Default Access Rights

The default access rights in NetWare bindery mode are set up by the following trustee assignments:

- The root of the SYS volume has [EVERYONE] as trustee, with File Scan, Read, Write, Create, Modify and Erase rights.
- The System folder has all rights, except Supervisor, filtered. Thus all system files are effectively protected from normal users.

Note:

- o You can use Filer to change the default access rights.

Setting Security Rights in NetWare Bindery

The security rights can be set using standard procedures, e.g. Filer.

To make **all the discs** available to some users only, follow these steps:

1. Login as Supervisor on the StorPoint CD+. In order for Filer to access the StorPoint CD+, the client must have an active connection.
2. Login as Supervisor on your NetWare Bindery file server and start Filer.
3. Change the current directory to AXIS<nnnnnn>_NW/SYS:.
4. Remove the [EVERYONE] trustee from the root.
5. Add a new trustee assignment to the root.

To restrict access to a **particular disc**, follow these steps:

1. Login as Supervisor on the StorPoint CD+. In order for Filer to access the StorPoint CD+, the client must have an active connection.
2. Login as Supervisor on your NetWare Bindery file server and start Filer.
3. Change the current directory to AXIS<nnnnnn>_NW/SYS:.

4. On the resource you want to protect, set an inherited rights filter and filter ALL rights.
5. Add the new trustee assignment to the resource. This makes it available only to the users in the trustee list.

- Note:
- o The NetWare bindery access rights for the StorPoint CD+ can be set using Group and User Objects as with any other file server.
 - o You can always access the StorPoint CD+ using the user name Supervisor and the password specified by the Server Password parameter. By default the password is `pass`.

Accessing the Discs

The StorPoint CD+ makes your networked CD/DVDs available to anyone who has the appropriate privileges on the network. Users will access the StorPoint CD+ just as any other file server.

You use your standard NetWare client to access the networked discs:

Network environments	See ...
Windows 95/98/ME and Windows NT 4/2000/XP (NDS)	page 55
Windows 95/98/ME and Windows NT 42000/XP (Bindery)	page 57
Windows for Workgroups 3.x (NDS)	page 59
Windows for Workgroups 3.x (Bindery)	page 61
Windows NT 3.51 (NDS)	page 63
Windows NT 3.51 (Bindery)	page 63
DOS	page 65

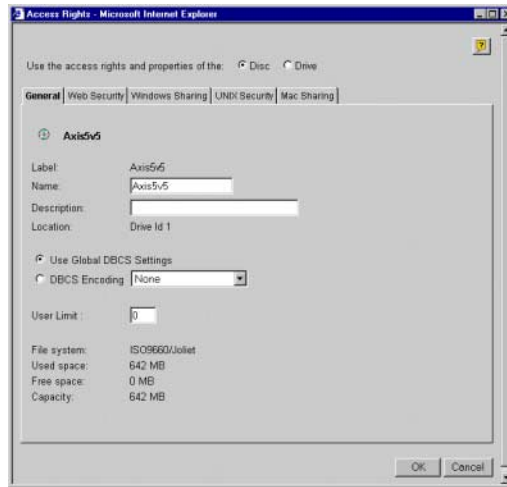
- Notes:
- o The examples will assume that you have not changed the default server name. The default server name is `AXIS<nnnnnn>_NW`, where `<nnnnnn>` are the six last digits of the StorPoint CD+ serial number. If you have changed the server name, use the new name where the examples refer to the default name.
 - o Depending on the access rights set up by the Administrator, you might be prompted to supply a password or receive a message similar to 'Access is denied' when trying to access a shared resource on the StorPoint CD+. The default Server password is `pass`.
 - o In the Windows 95/98/ME and Windows NT 4/2000/XP environments, you can install the AXIS StorPoint Disco utility, which is a powerful Windows application for locating and using CD/DVDs located on AXIS storage servers, wherever they are on your network. Refer to "AXIS StorPoint DISCO" on page 91.

General Disc Settings

To specify the general settings for an inserted disc, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`.
3. Click **Discs & Drives**.
4. Locate the desired disc in the file **Volumes** folder.

5. Click **Properties** . The Properties dialog box appears:

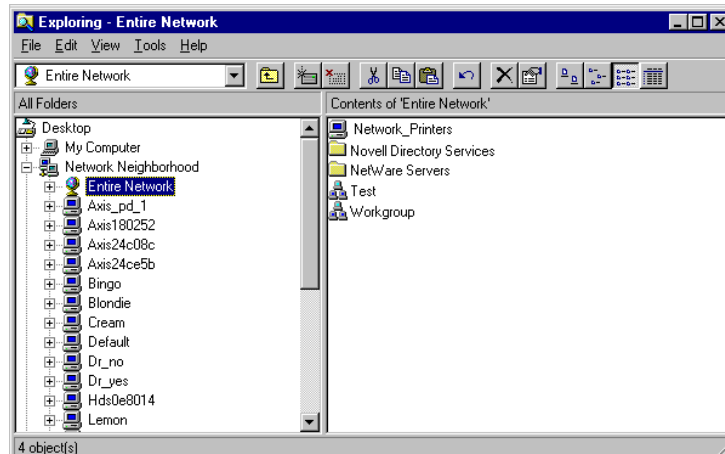


6. Select the **General** tab. You can specify the following settings:
- **Name** - The volume name that will be presented to the clients. If left blank, the volume label will be used.
 - **Description** - The description that will be displayed in Windows Explorer.
 - **DBCS Encoding** - Select the required Asian language from the drop-down list.
 - **User Limit** - The number of users that will have access to the disc. To disable this function, enter the value 0 into this field.
7. Click **OK**.

Windows 95/98 and Windows NT 4 (NDS Mode)

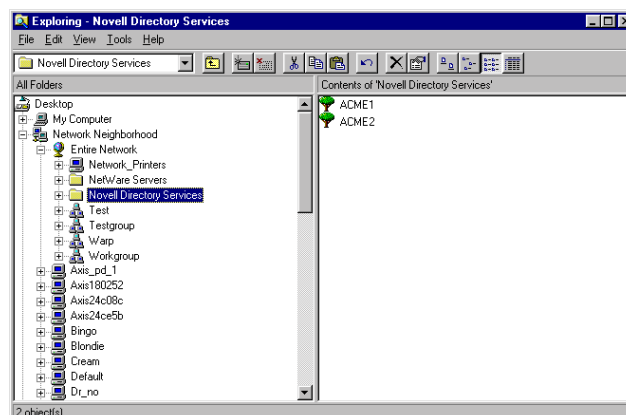
In Windows 95/98/Me and Windows NT/2000/XP on a Novell NetWare client for NDS, follow these steps to map the StorPoint CD+:

1. Start the Windows Explorer.
2. Expand the **Network Neighborhood** icon. The available resources are displayed:

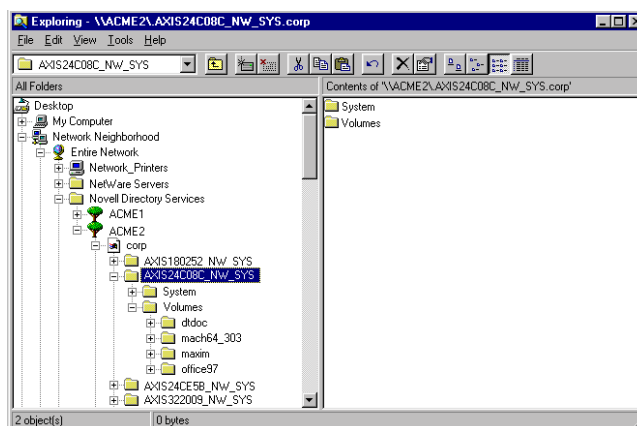


Note: Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.

- Expand the Entire Network icon and open the Novell Directory Services folder.



- Locate your StorPoint CD+. The default name is AXIS<nnnnnn>_NW_SYS, where nnnnnn are the last six digits of the StorPoint CD+ serial number. Expand the Volumes folders to display all the discs

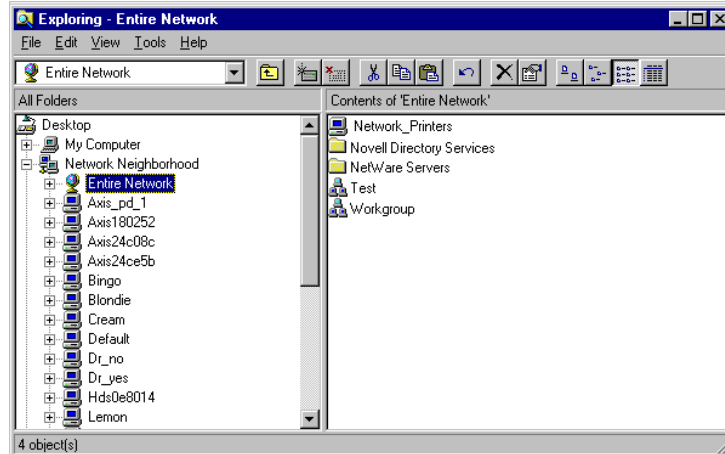


- To map a StorPoint CD+ resource to a drive letter, select:
 - AXIS<nnnnnn>_NW_SYS for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. office97
- Right click the resource and select Map Network Drive...
- Select a drive letter for your StorPoint CD+.
- Check Reconnect at logon if you wish to use the resource under the same drive letter the next time you start your computer.
- Check Check to make a folder appear as the top most level option if available.
- Click OK. The StorPoint CD+ is ready for use.

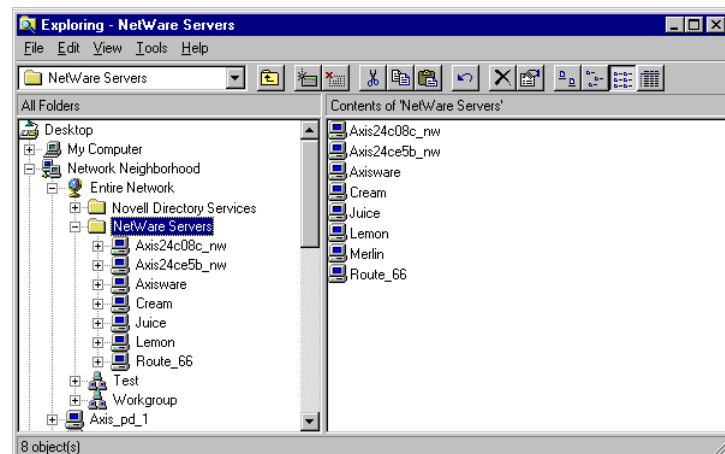
Windows 95/98/Me
and
Windows NT/2000/XP
(Bindery Mode)

In Windows 95/98/Me and Windows NT/2000/XP on a Novell NetWare client for bindery mode, follow these steps to map the StorPoint CD+:

1. Start the Windows Explorer.
2. Expand the Network Neighborhood icon. The available resources are displayed:

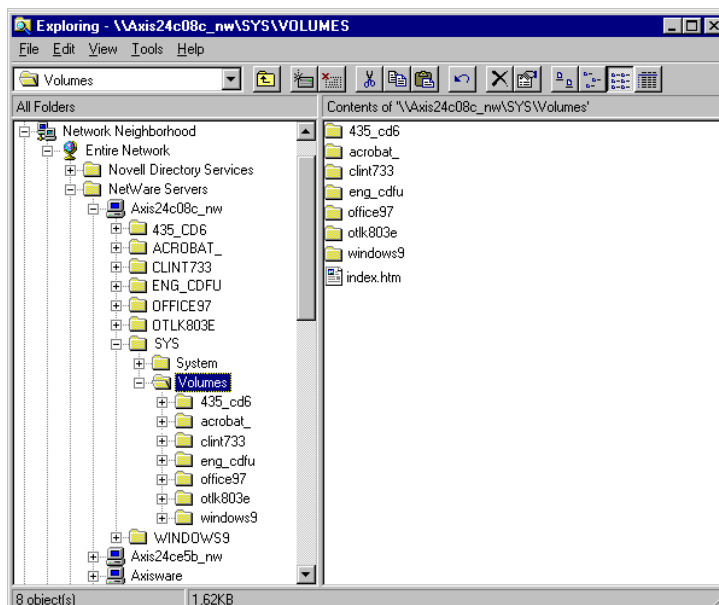


- Note:
- o Depending on your version of Windows Explorer, your screen may differ from the screen shown in this example.
3. Expand the Entire Network icon and then open the NetWare Servers folder.



4. Double click the entry for your StorPoint CD+. The default name is Axis<nnnnnn>_nw, where <nnnnnn> are the six last digits of the StorPoint CD+ serial number.
5. In bindery mode, you will be prompted to enter user name and password, unless you are already logged on.

6. Once you are logged on to the StorPoint CD+, expand the SYS and Volumes folders to display all the discs:

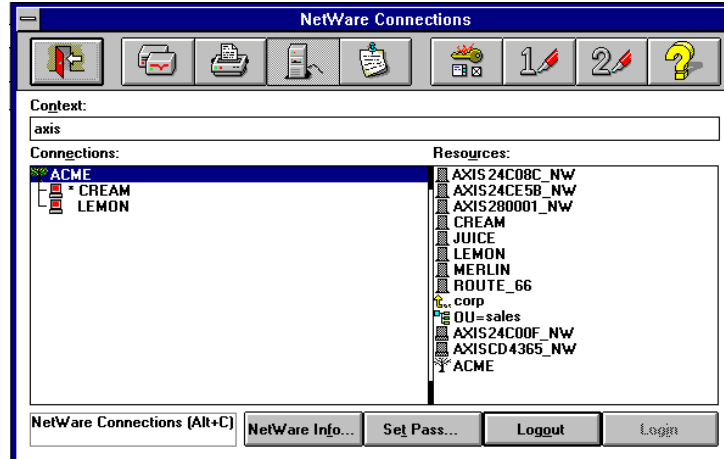


- Note:
- o If the Show All Volumes parameter is set to yes, the individual discs will be shown at the same level as SYS. Some applications will not run properly unless the data is stored at root level. To avoid such problems, assign a drive letter to that particular volume.
7. To map a StorPoint CD+ resource to a drive letter, locate:
 - SYS for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. office97
 8. Right click the resource and select Map Network Drive...
 9. Select a drive letter for your StorPoint CD+.
 10. Check Reconnect at logon if you wish to use the resource under the same drive letter the next time you start your computer.
- Click OK. The StorPoint CD+ is ready for use.

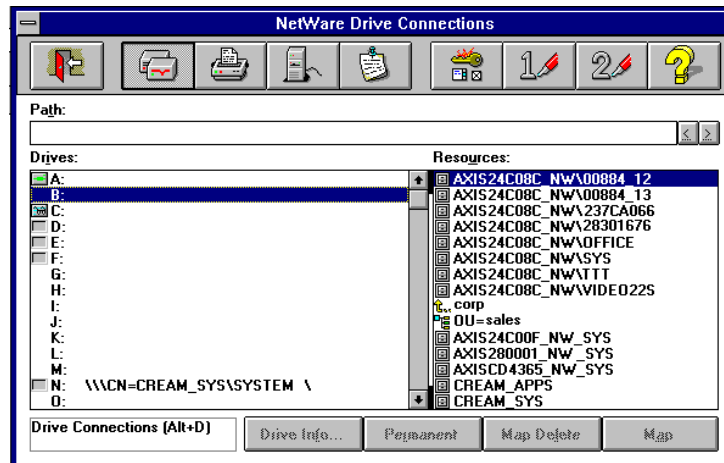
Windows for Workgroups 3.x (NDS Mode)

In Windows for Workgroups on a Novell NetWare client for NDS, follow these steps:

1. Start the File Manager and select Network Connections from the Disk menu. If you also have Microsoft Network installed, you may have to click the NetWare... button.
2. Click the NetWare Connections button on the toolbar. A screen similar to this is displayed:

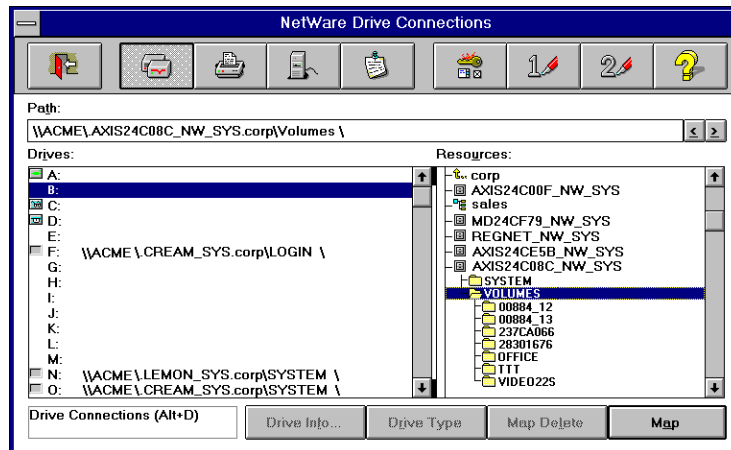


3. Select the entry for your StorPoint CD+. The default name is AXIS<nnnnnn>_NW, where <nnnnnn> are the last six digits of the StorPoint CD+ serial number.
4. Click the Login button.
5. Once you are logged in to the StorPoint CD+, click the Drive Connections button on the tool bar. This screen is displayed:



- Note:
- o If the Show All Volumes parameter is set to yes, the individual discs are shown at the same level as SYS. Some applications will not run properly unless the data is stored at root level. To avoid such problems, assign a drive letter to that particular disc.

- Double click `AXIS<nnnnnn>_NW_SYS` and then `VOLUMES` to display this screen:

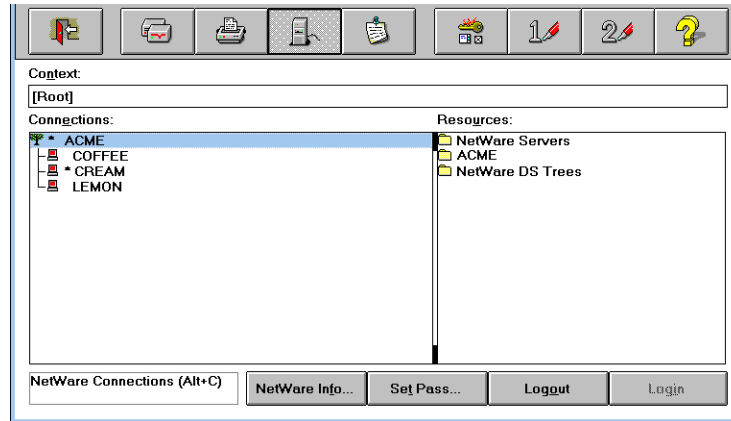


- Select a drive letter in the Drives listing.
- In the Resources listing, select a StorPoint CD+ resource:
 - `AXIS<nnnnnn>_NW_SYS` for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. OFFICE
- Click Map to map the StorPoint CD+ to the selected drive letter.
- Click Permanent if you wish to use the resource under the same drive letter the next time you start your computer.
- Click the Exit button on the tabular. The StorPoint CD+ is ready for use.

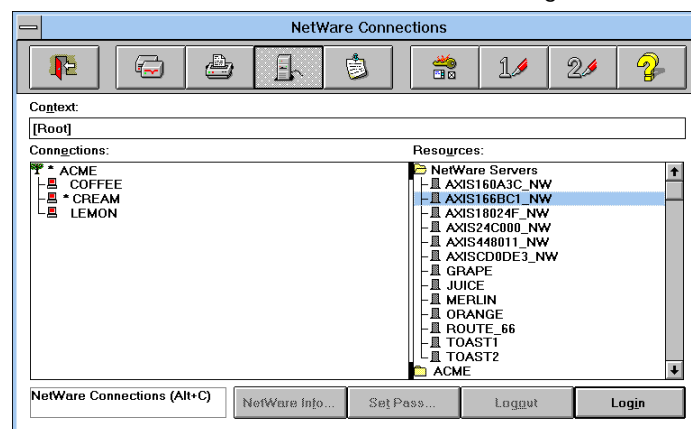
Windows for Workgroups 3.x (Bindery Mode)

In Windows for Workgroups on a Novell NetWare client for bindery mode, follow these steps:

1. Start the File Manager and select Network Connections from the Disk menu. If you also have Microsoft Network installed, you may have to click the NetWare... button.

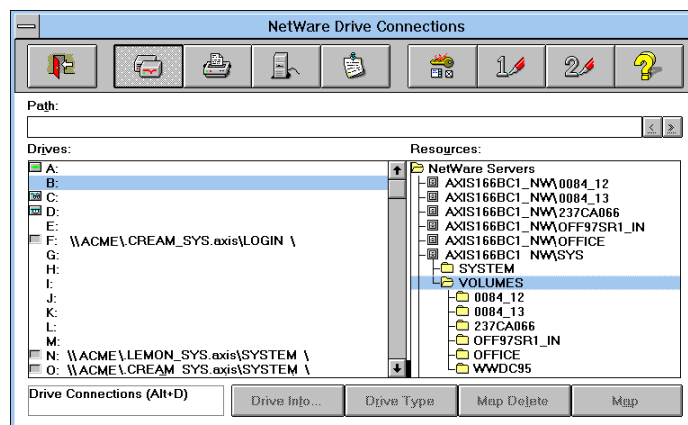


2. Click NetWare Servers in the Resources listing.



3. Locate the entry for your StorPoint CD+. The default name is AXIS<nnnnnn>_NW, where <nnnnnn> are the last six digits of the StorPoint CD+ serial number. Use drag-and-drop to move the StorPoint CD+ to the Connections listing.
4. You will be prompted for user name and password. By default the password is set to `pass`.

5. Click Drive Connections. Double click AXIS<nnnnnn>_NW\SYS and then open the VOLUMES folder.

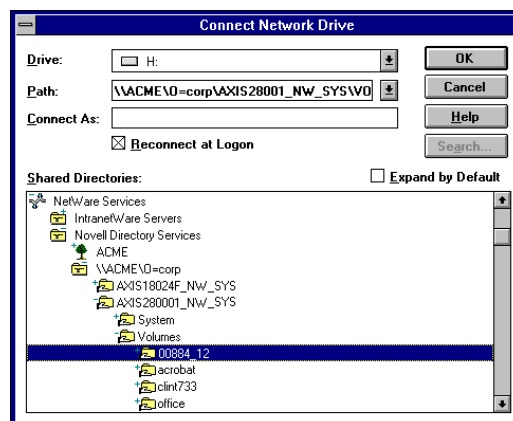


- Note:
- o If the Show All Volumes parameter is set to yes, the individual discs are shown at the same level as SYS. Some applications will not run properly unless the data is stored at root level. To avoid such problems, assign a drive letter to that particular disc.
6. Select a drive letter in the Drives listing.
 7. In the Resources listing, select a StorPoint CD+ resource:
 - AXIS<nnnnnn>_NW\SYS for root level access
 - VOLUMES for access to all the discs
 - the volume name for access to an individual disc, e.g. OFFICE
 8. Click Map to map the StorPoint CD+ to the selected drive letter.
 9. Click Permanent if you wish to use the resource under the same drive letter the next time you start you computer.
- Click the Exit button on the tabular. The StorPoint CD+ is ready for use.

Windows NT 3.51
(NDS Mode)

On Windows NT 3.51 on an Novell NetWare client for NDS, follow these steps:

1. Start the File Manager.
2. From the Disk menu, select Connect Network Drive...
3. In the listing, open the Novell Directory Servers folder.
4. Open the NDS tree and the context in which the StorPoint CD+ is installed. The default name is AXIS<nnnnnn>_NW_SYS, where <nnnnnn> are the six last digits of the StorPoint CD+ serial number.



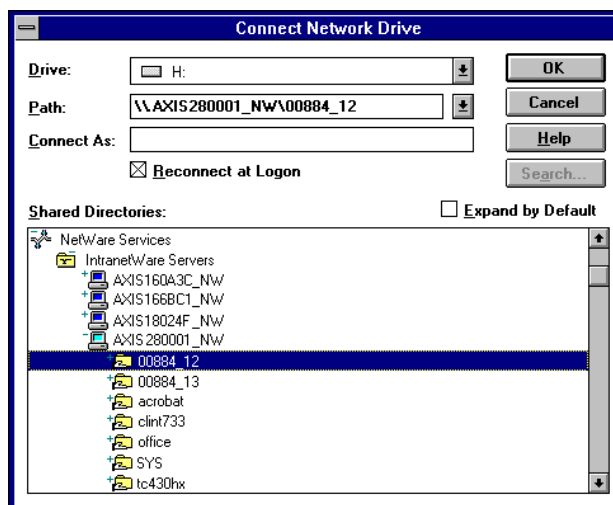
5. To connect a StorPoint CD+ resource, select:
 - SYS for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. office
6. Select a drive letter for your StorPoint CD+.
7. Check Reconnect at Logon if you wish to use the resource under the same drive letter the next time you start your computer.
8. If you wish to connect using a different user name, enter the name in the **Connect As** box. Otherwise, leave the box empty.
9. Click OK. The StorPoint CD+ is now ready for use.

Windows NT 3.51
(Bindery Mode)

On Windows NT 3.51 on an Novell NetWare client for bindery mode, follow these steps:

1. Start the File Manager.
2. From the Disk menu, select Connect Network Drive...
3. In the listing, open the IntranetWare Servers folder.

4. Double click the entry for your new StorPoint CD+. The default name is AXIS<nnnnnn>_NW, where <nnnnnn> are the six last digits of the StorPoint CD+ serial number.



5. In bindery mode, you will be prompted to enter your user name and password, unless you are already logged in.
6. To connect a StorPoint CD+ resource, select:
 - SYS for root level access
 - Volumes for access to all the discs
 - the volume name for access to an individual disc, e.g. office
7. Select a drive letter for your StorPoint CD+.
8. Check Reconnect at Logon if you wish to use the resource under the same drive letter the next time you start your computer.
9. If you wish to connect using a different user name, enter the name in the Connect As box. Otherwise, leave the box empty.

Click OK. The StorPoint CD+ is now ready for use.

DOS When you are using DOS in NetWare, you use the `map` command to mount the StorPoint CD+. Follow these steps:

1. At the DOS prompt of a NetWare file server, type:

```
map root <drive letter>:=AXIS <nnnnnn>
/<volume name>:<folder>
```

where `<nnnnnn>` are the six last digits of your StorPoint CD+ serial number and `<folder>` is the StorPoint CD+ folder you want to map.

2. To make the connections permanent, edit your `autoexec.bat` file to include your map commands.

Example 1 (Root level access):

To access the root level of your StorPoint CD+ with serial number 00408CCD000B under the drive letter E, type:

```
map root E:=AXISCD000B_NW/SYS:
```

Example 2 (Volumes folder access):

To access all the discs of your StorPoint CD+ with serial number 00408CCD000B under the drive letter F, type:

```
map root F:=AXISCD000B_NW/SYS:VOLUMES
```

Example 3 (Disc access):

If your StorPoint CD+ serial number is 00408CCD000B, and you want to map a disc named 44018881 to drive G, type:

```
map root G:=AXISCD000B_NW/SYS:VOLUMES/44018881
```

- Note:**
- o If the **Show All Volumes** parameter is set to yes, individual discs can be mapped at SYS level. Some applications will not run properly unless the data is stored at root level. To avoid such problems, you can map drive G directly to the volume named 44018881. Type:

```
map root G:=AXISCD000B_NW/44018881
```

- Note:**
- o For more options, refer to the MAP command help.

Section 5 UNIX (NFS)

This section outlines the required configuration settings for running the StorPoint CD+ in the UNIX (NFS) environment, how to set up access restrictions and how to mount the StorPoint CD+ resources.


- Note:
- o Make sure you have set the Internet address as described in “*Assigning an IP Address*” on page 12.


If you are using the StorPoint CD+ in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- “*Microsoft & IBM Networks (SMB)*” on page 27
- “*NetWare (NCP)*” on page 43
- “*Macintosh (AFP)*” on page 71
- “*FTP (File Transfer Protocol)*” on page 78
- “*Web Browser (HTTP)*” on page 81

Network Settings

Use the Administration pages within the StorPoint CD+ Web interface to configure the StorPoint CD+.

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the User ID and the Server password. By default, these are set to `root` and `pass`. To change the Server password, see “*Server Password*” on page 24.
3. Click **Network Settings**.
4. Click **Detailed View** . The **Protocols** dialog box appears.
5. Select the **UNIX (NFS)** tab and specify the settings.
6. Click **OK**.


- Notes:
- o Context sensitive online help  is available for all parameters.
 - o The parameter list is described in detail in “*Parameter List*” on page 115.

Access Control

To grant access to the StorPoint CD+ resources in the UNIX (NFS) environment, you add clients with specific host names or IP addresses to the NFS export list. You can also specify a range of IP addresses.

1. Click **Discs & Drives**.
2. To make all of the discs available to some clients only:
 - Locate the **Volumes** folder in the file tree.

To protect one or several resources, but grant access to the other resources:

 - Locate the resource you want to protect in the file tree.
3. Click **Properties** .
4. Open the **UNIX Security** page.



5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
6. Optionally fill in a description of the shared resource in the **Description** field. This text will appear in the directory listing on the NFS clients. If left blank, the list of clients that are allowed to mount the exported resource will appear instead.

Note: o HFS files are not exported automatically. This has to be defined via the Web interface.

7. Choose whether you want to add a host name or an IP address.

Notes: o When specifying a host name, you can use these wildcards:

*	which represents any number of characters, except dots (...). A single * implies any host name.
?	which represents one character, except dot (.).

- o You can specify an IP address/subnet mask pair in order to export the resource to an IP subnetwork.
- 8. Specify the new entry and click **Add** to add it to the NFS export list.
- 9. Click **OK**.

Note: o Per file access control is configured by using native utilities such as `chown`, `chgrp` and `chmod`, on the mounted exports.

Accessing the Discs

The StorPoint CD+ integrates into your network operating system just like any other file server. Thus you can use standard commands to access it.

To access the discs from your UNIX applications, you must first mount the StorPoint CD+ to make the data available to your system. Some applications will not run properly unless the data is located at root level. Discs that include such applications must therefore be individually mounted.

Note: o You will need root privileges to mount the StorPoint CD+.

To access the StorPoint CD+ resources from a UNIX client, follow these steps:

1. Create a directory for the StorPoint CD+.

```
mkdir <directory>
```

Example:

```
mkdir /storpoint_sales_dept
```

2. Display the export list.

```
showmount -e <IP address>
```

3. Mount the resource.

```
mount <IP address>:<resource> <directory>
```

where `<IP address>` is the IP address or host name

Example 1 (Root):

```
mount 192.16.253.80:/ /storpoint_sales_dept
```

Example 2 (Volumes directory):

```
mount 192.16.253.80:/volumes /storpoint_sales_dept
```

Example 3 (Disc):

```
mount 192.16.253.80:/volumes/acrobat
/storpoint_sales_dept
```


- Notes:
- o To increase performance, you can set the buffer size to 8192 as an option in the mount command on most UNIX systems, e.g.

```
mount -o rsize=8192 <IP address>:<resource>
<mountpoint>
```

- o Different UNIX systems may have different mount command options. See the manual page on the client system.

General Disc Settings

To specify the general settings for an inserted disc, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`.
3. Click **Discs & Drives**.
4. Locate the desired disc in the file **Volumes** folder.
5. Click **Properties** . The Properties dialog box appears:



6. Select the **General** tab. You can specify the following settings:
 - **Name** - The volume name that will be presented to the clients. If left blank, the volume label will be used.
 - **Description** - The description that will be displayed in Windows Explorer.
 - **User Limit** - The number of users that will have access to the disc. To disable this function, enter the value 0 into this field.

7. Click OK.

Section 6 Macintosh (AFP)

This section outlines the required configuration settings for running the StorPoint CD+ in the Macintosh (AFP) network environment. It also describes how to set up access restrictions.

If you are using the StorPoint CD+ in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:

- *"Microsoft & IBM Networks (SMB)"* on page 27
- *"NetWare (NCP)"* on page 43
- *"UNIX (NFS)"* on page 66
- *"FTP (File Transfer Protocol)"* on page 78
- *"Web Browser (HTTP)"* on page 81

Network Settings

No specific settings are required to make use of the StorPoint CD+ in the Macintosh (AFP) environment. However, you might want to change some of the default settings, e.g. the AFP server name or the authentication server settings.

If you have set an IP address, you can use the Administration Web pages to configure the StorPoint CD+ via a standard Web browser. The installation wizard will guide you through the procedure. See *"Wizard"* on page 72.

If you do not use TCP/IP and Web browsers on your network, you can edit all the parameter settings by modifying the [AFP] section in the `config.ini` file.

- Note:
- o See *"Text Editor in Macintosh"* on page 20, for more information on how to locate and modify the `config.ini` file.

AFP Protocols

The StorPoint CD+ supports the following transport methods:

- AFP over TCP/IP - max 255 users
- AFP over AppleTalk - max 125 users

Both protocols are enabled by default. However, you can disable the protocols by setting the appropriate configuration parameters.

AFP Server Name

The default AFP server name is `AXIS<nnnnnn>_AT`, where `<nnnnnn>` are the last six digits of the StorPoint CD+ serial number. This is the name that will be presented to the Macintosh clients on the network. You can change that name by editing the AFP Server Name parameter. It can be useful to choose a more descriptive name, e.g. in order to indicate where the unit is located, or for what it is used.

Recommendation! Choose a more descriptive name for your server, e.g CD Server.

Zone A zone is a logical grouping of AppleTalk networks on a LAN or WAN. There can be multiple networks within a zone and, in some cases, multiple zones assigned to a network segment. An AppleTalk router is responsible for assigning zone information to the AppleTalk networks to which it is attached. You specify the zone by editing the Zone Name parameter.

Access Control Access control is used for restricting access to the shared volumes and discs on the StorPoint CD+. In the Macintosh (AFP) environment you can select whether you want to use an authentication server or passwords for access control. You choose which method to use by enabling/disabling the Use Authentication Server parameter.

Authentication Server When using an authentication server, all user names and passwords will be verified against the authentication server. The user will then be granted access to specific resources depending on the permissions set for the user names used at logon.

Note:

- o Any Macintosh computer can be defined as the Authentication Server provided it has file sharing enabled. This means the user names defined on the authentication server can be used also for the StorPoint CD+.

To use this method for access control, you must enable the Use Authentication Server parameter. How to specify the permissions is described in "*Authentication Server*" on page 74.

Passwords When using passwords, the user will be prompted for the password when trying to access the volume. The user will then be granted access to the volume and all its subfolders. You can define different passwords for specific resources.

To use passwords for access control, the Use Authentication Server parameter must be disabled. This is the default setting. How to specify passwords is described in "*Passwords*" on page 75.

Recommendation! Using an authentication server for access control is the preferred method for Macintosh-based networks.

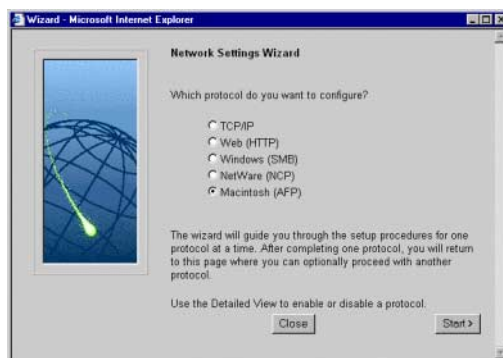
Wizard The installation Wizard is a convenient way to set up your StorPoint CD+ for your Macintosh (AFP) environment. It will guide you through the following:


- Defining your server name and the zone you want your StorPoint CD+ to appear in.
- Defining how you want to control access to shared resources.


To run the Wizard, follow the steps outlined below:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, the User Name is set to `root` and the Server password is set to `pass`.

3. Click **Network Settings**.
4. Click **Wizard** . The **Network Settings Wizard** dialog appears.



5. Choose **Macintosh (AFP)**. Click **Start** to proceed with the installation.
6. Follow the instructions on the screen. When finished, click **Close**.
7. Click **Detailed View** . The **Protocols** dialog box appears.
8. Select the **Mac (AFP)** tab and verify the settings.
9. Click **OK**.

- Notes:
- o Context sensitive online help  is available for all parameters.
 - o The parameter list is described in detail in "*Parameter List*" on page 115.

Access Control

In the Macintosh (AFP) environment, you have these options for access control:


- Authentication server on page 74 - or -
- Passwords on page 75

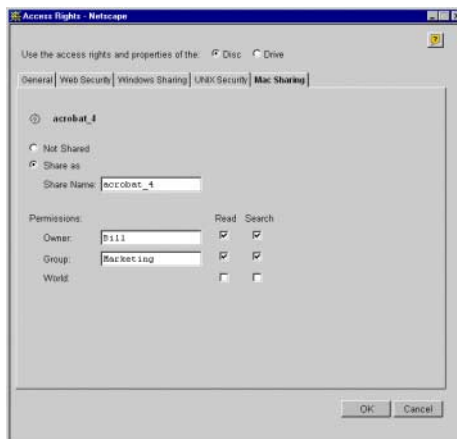
You first configure the StorPoint CD+ for the method you want to use, see "*Access Control*" on page 72. By default the authentication server is disabled and no password is used. Consequently, Root and Guest can login and access all the shared volumes.

Authentication Server

Make sure the StorPoint CD+ has been configured to use an authentication server, see page 72.

To specify permissions for the user names defined on the authentication server, follow these steps:

1. From the Administration Web pages, click **Discs & Drives**.
2. Locate the volume you want to protect in the file tree.
3. Click **Properties** .
4. Open the **Mac Sharing** page.




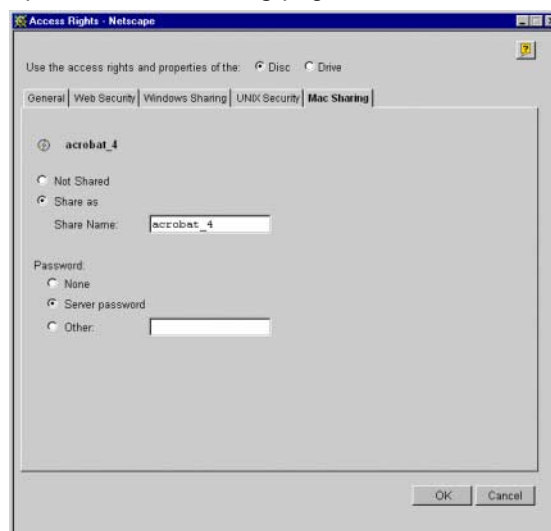
5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
 6. Select the **Share as** radio button, and enter a share name in the **Share Name** field.
 7. Specify the name of the user you want to define as volume owner and the group to which the owner belongs. Note that the volume owner can only belong to one group. World includes all other users.
 8. Check the permissions you want the users to have:
 - **Read** - Read files.
 - **Search** - List files and folders.
- Recommendation!** Use the same setting for Read and Search.
9. Click **OK**.

Passwords

Make sure the StorPoint CD+ has been configured to use passwords, see page 72. By default, all users will have access to all the discs. The system files are protected by the Server password.

To change the settings:

1. From the Administration Web pages, click **Discs & Drives**.
2. Locate the volume you want to share in the file tree.
3. Click **Properties** .
4. Open the **Mac Sharing** page.

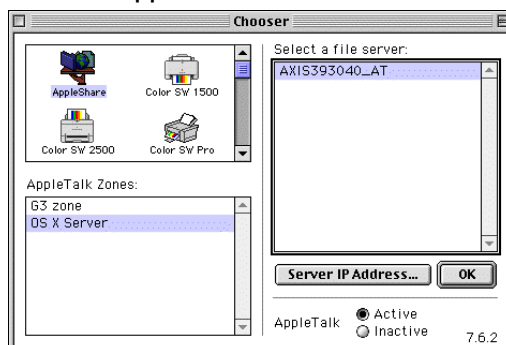


5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
6. Select the **Share as** radio button, and enter a share name in the **Share Name** field.
7. Select the desired password option:
 - **None** - if you do not want to use passwords for protecting the resource.
 - **Server password** - if you want use the Server password for protecting the resource.
 - **Other** - if you want to specify a password in addition to the Server password.
8. Click **OK**.

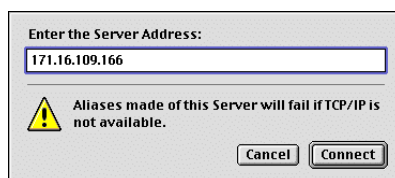
Accessing the Discs

To mount the StorPoint CD+ on a Windows network from a Macintosh, follow these steps:

1. Open the Chooser from the **Apple** menu.
2. Click the **AppleShare** icon.



3. Depending on which AFP protocol you are using:
 - If you are running AFP over **AppleTalk**, select the name of your StorPoint CD+ from the **Select a file server** list. The default name is **AXIS<nnnnnn>_AT** where **<nnnnnn>** are the last six digits of the StorPoint CD+ serial number. Click **OK**.
 - If you are running AFP over **TCP/IP**, click **Server IP Address...** and enter the IP address of your StorPoint CD+ in the popup dialog. Click **Connect**.

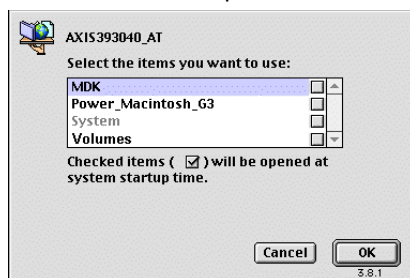


4. Select **Guest**, or **Registered User** if you are using an authentication server.



5. Click **Connect**.

6. Choose the access point:



- The volume name for access to an individual disc.
 - The **Volumes** folder for access to all the shared discs.
 - The **System** folder is always present and contains system configuration files.
7. Click OK.
8. An icon representing the shared resource will appear on your desktop.

Section 7 FTP (File Transfer Protocol)

This section describes how to configure the StorPoint CD+ for FTP.

The StorPoint CD+ can be used as an FTP server, i.e. it is possible to use the File Transfer Protocol (FTP) to put and get files. You can use FTP for:

- Upgrading the firmware
- Accessing the mounted discs

Note: o The FTP protocol is always enabled in the StorPoint CD+.

The following FTP commands are supported:


```
get      put      dir      cd      pwd
```

If you intend to use StorPoint CD+ in a multi protocol environment, proceed to the other relevant sections in this manual:

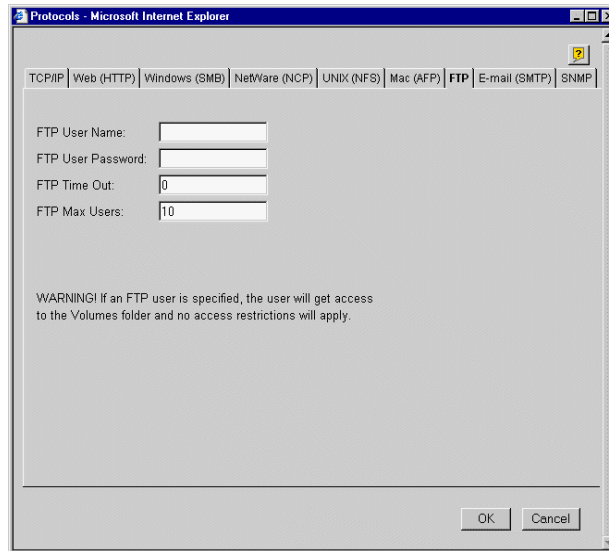
- *"Microsoft & IBM Networks (SMB)"* on page 27
- *"NetWare (NCP)"* on page 43
- *"UNIX (NFS)"* on page 66
- *"Macintosh (AFP)"* on page 71
- *"Web Browser (HTTP)"* on page 81

Network Settings


Use the Administration pages within the StorPoint CD+ Web interface to specify the FTP settings. Follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the Server password, see *"Server Password"* on page 24.
3. Click **Network Settings**.
4. Click **Detailed View** . The Protocols dialog box appears.

5. Select the FTP tab.



6. Optionally specify an alternative FTP User Name and FTP User Password. If you leave the fields empty, only the Server password can be used for logging in to the StorPoint CD+ via FTP.
 - o Other optional settings for FTP are:
 - FTP Time Out, which specifies the time in seconds of inactivity after which an FTP session is closed down.
 - FTP Max Users, which specifies the maximum number of simultaneous FTP sessions.
7. Click OK.

- Notes:
- o Context sensitive online help  is available for all parameters.
 - o The parameter list is described in detail in "Parameter List" on page 115.

Access Control

You can always use the user name `root` in combination with the Server password for logging in to the StorPoint CD+ via FTP. This will grant access to all the resources in the **Volumes** folder, all the configuration files in the **System** folder and flash loading. This type of access is intended for the Administrator only.

However, if you want users to have the possibility to log in via FTP you can specify an alternative FTP user name and password on the **Network Settings - FTP** page. When users log on to the StorPoint CD+ using this user name, they will get unlimited access to the **Volumes** folder, but no access to the **System** folder.

- Warning!**
- o A user logging in with the FTP user name and password will automatically get access to the **Volumes** folder, i.e. all the discs and their contents. No access restrictions will apply.

Section 8 Web Browser (HTTP)

This section describes how to configure the StorPoint CD+ for use via its Web interface.

The StorPoint CD+ supports HTTP over TCP/IP, which means that it works as a Web server available on the Internet and intranets.

If you are using the StorPoint CD+ in a multiprotocol environment, proceed to the other relevant sections of the manual, namely:


- “Microsoft & IBM Networks (SMB)” on page 27
- “NetWare (NCP)” on page 43
- “UNIX (NFS)” on page 66
- “Macintosh (AFP)” on page 71
- “FTP (File Transfer Protocol)” on page 78

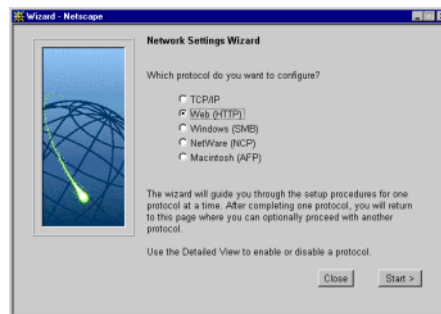
Network Settings


You use the Administration Web pages to configure the StorPoint CD+.


Wizard

The installation wizard is a convenient way to set up your StorPoint CD+ for your network environments.

1. Click **Network Settings**.
2. Click **Wizard** . The Wizard Network Settings dialog appears.




3. Choose **Web (HTTP)**. Click **Start** to proceed with the installation.
4. Follow the instructions on the screen. When finished, click **Close**.
5. Click **Detailed View** . The Protocols dialog box appears.
6. Select the **Web (HTTP)** tab and verify the settings.
7. Click **OK**.

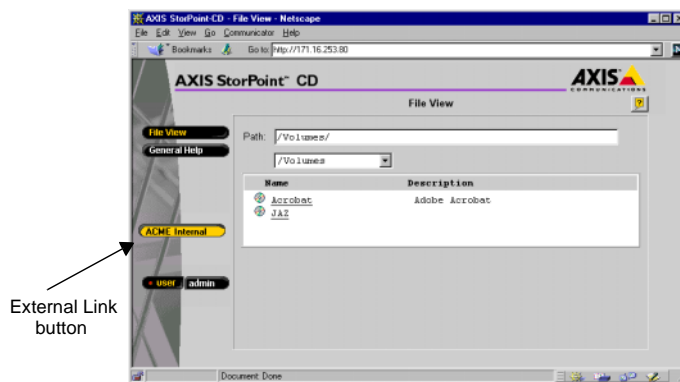
- Notes:
- o Context sensitive online help  is available for all parameters.
 - o The parameter list is described in detail in “Parameter List” on page 115.

External Link

You can add a customized link on the File View page. For example, you might want to provide a link to a page on your company's intranet with guidelines on how to access the discs on the StorPoint CD+.

Follow these steps:

1. Click **Network Settings**.
2. Click **Detailed View** .
3. Select the **Web (HTTP)** tab.
 - In the URL to Page field, specify the full path to the page, e.g. `http://www.company.com`.
 - In the URL to Image field, optionally specify a link to an image to be used as a button for the customized link. Specify the full path, e.g. `http://www.company.com/images/image.gif`, or the path relative to the URL of the page, e.g. `images/image.gif`. If you leave the field blank, a standard button will be used.




Access Control

All users will always have access to the StorPoint CD+ File View page. However, individual discs can be protected by password. If required, you can limit Web browser access to the Administration pages only.

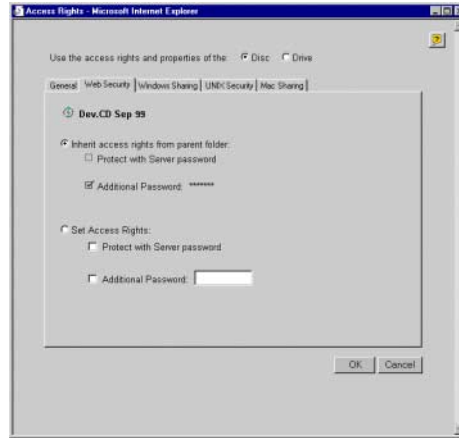
Use the Administration pages within the StorPoint CD+ Web interface for access control. Refer to "*Accessing the StorPoint CD+ Web Pages*" on page 21.

- Note:
- o The Server password implies full access to the StorPoint CD+, regardless any additional password set for particular discs. To change the Server password, see "*Server Password*" on page 24.

Discs & Drives To restrict user access to a particular disc:


1. Click **Discs & Drives**.
2. Locate the disc you want to protect in the file tree.
3. Click **Properties** .

4. Select the Web Security tab.



5. You can select whether you want to use the access rights of the disc or the drive by checking the appropriate radio button. Note that this is a global setting for all network protocols.
6. Select **Set Access Rights**. Optionally specify an additional password. Note that the Server password is always valid.
7. Click **OK**.

Disable User Access To disable user access from the Web browser and thus limit access to the Administration pages only, follow these steps:

1. Click **Network Settings**.
2. Click **Detailed View** .
3. Open the **Web (HTTP)** page.
4. Uncheck the **Enable access to volumes via Web browser (HTTP)** check box.
5. Click **OK**.

Accessing the Discs

To access the discs from a Web browser, follow these steps:

1. Start the Web browser.
2. Enter the name or IP address of the StorPoint CD+ in the location/address field.
3. This brings you to the File View page of the StorPoint CD+:



4. This page lists all the shared discs and folders. You might be prompted to supply a password in order to access a particular discs. We recommend that you add this page as a bookmark in your Web browser.

Section 9 Recordable Discs

If you have connected a CD-Recordable drive to your StorPoint CD+, users can copy data to recordable discs, such as CD-R and CD-RW discs. To limit the number of users, this function can be protected by password.

This section outlines the procedures for using recordable discs with your StorPoint CD+.

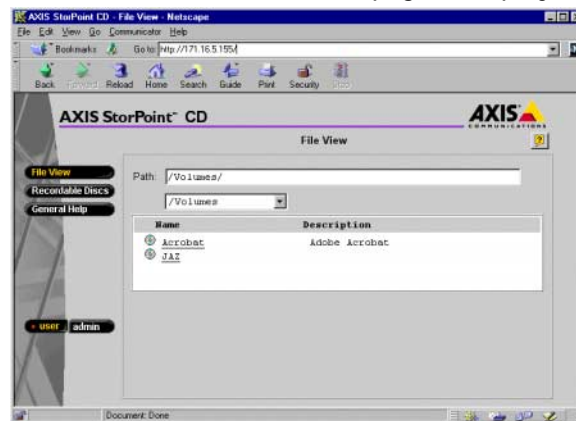
- Notes:
- o The Basic versions of the StorPoint CD+ do not support writing to recordable discs.
 - o If you experience problems with writing data to a disc, see "*Errors when Writing Data to a Disc*" on page 135.

Copying Files to Recordable Discs

Follow these steps:

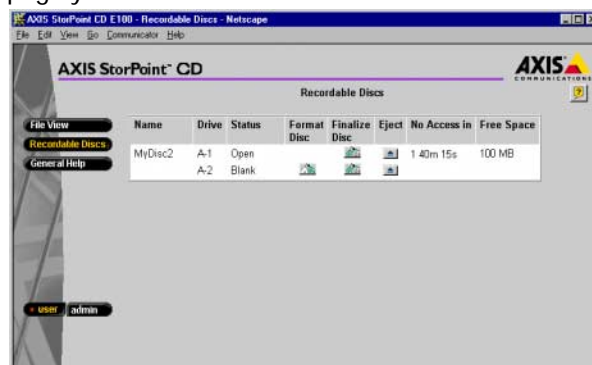
1. Insert a CD-R or CD-RW disc into the CD-Recordable drive.
2. Start the Web browser and enter the IP address of your StorPoint CD+ in the location/address field.

The StorPoint CD+ File View page is displayed.



If you have a CD-Recordable drive connected to your StorPoint CD+, the Recordable Discs button appears in the main menu.


3. Click **Recordable Discs**. The **Recordable Discs** page is displayed. From this page you have access to the **Format Disc** and **Finalize Disc** dialogs.



The IDE version lists the drives as Master or Slave for each bus.

Formatting the Disc

Before you can start copying files to your disc, it must be formatted.

1. In the list, your unformatted disc will appear without a name and with status **Blank**. Click  to open the **Format Disc** dialog.
2. Enter a name for your disc in the **Name** field.
3. Click **OK**. A progress bar will appear on the screen while your disc is being formatted.

When the progress bar has disappeared from the screen, you can start copying files to the disc.

- Notes:
- o Formatting a CD-R and a blank CD-RW will take about 20 seconds. Reformatting a CD-RW can take up to 80 minutes depending on writing speed and the amount of data previously stored on the disc.
 - o Any data stored on the disc will be erased when the disc is formatted.

Copying Files


To copy data to the formatted disc:

1. Open the Windows Explorer, or the file manager tool you normally use. Locate the formatted disc. You will find it under the **Volumes** folder.
2. Copy the files to your disc.
3. Return to the **Recordable Discs** page.

Finalizing the Disc

When you have finished copying files to the disc, you must finalize it to make it readable by other computers. This will also close the recording session and prevent future recordings to the disc. The time it takes to finalize the disc depends on how many files and directories you have copied to it.

To finalize the disc:

1. Click  to open the **Finalize Disc** dialog.
2. Click **OK**.

Your disc is now finalized and can be read by other computers.

- Notes:
- o It is not possible to copy files to a finalized disc.
 - o If your disc is a CD-RW, you can reformat the disc and re-use it for copying.

Setting a Password

You can protect the Recordable Discs page with a password in order to limit the number of users who have access to this page.

To set a password, follow these steps:

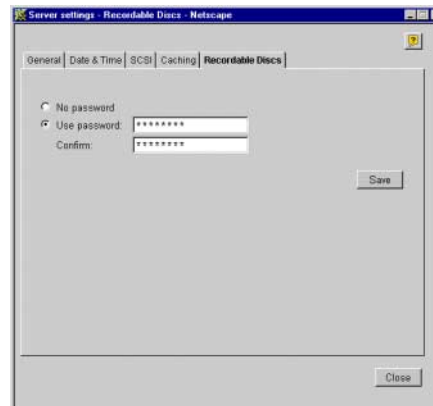
1. Start the Web browser and enter the IP address of your StorPoint CD+ in the location/address field.

The StorPoint CD+ File View page is displayed.

2. Click **admin**. You will be prompted for the Server username and password. By default, these are set to `root` and `pass`. On the Server Settings page, click the **Change...** button,



3. Select the **Recordable Discs** tab.



4. Enter a password in the Password field and confirm it in the Confirm field.
5. Click **Save**.

The user will now be prompted for this password when trying to access the Recordable Discs page.

Section 10 CD Grouping

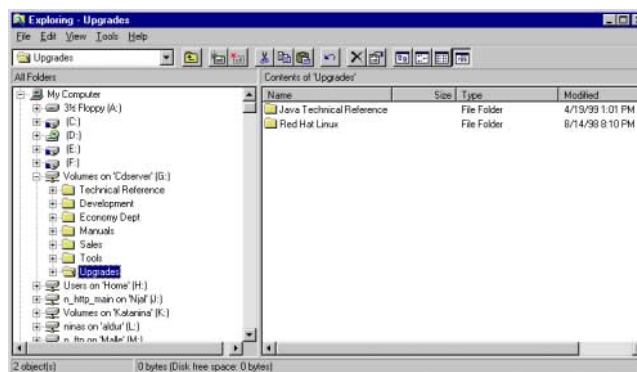
In the Microsoft and IBM (SMB) and the Novell NetWare network environments it is possible to use your standard file management tool to create new folders under the **Volumes** folder. In the new group folders you can organize your networked discs into groups. It will make it easier for you to locate and access a required disc if it has been organized into a folder with a name relating to its contents.

- Note:
- o The Basic versions of the StorPoint CD+ do not support organizing discs using a file management tool.

Windows Explorer

- Note:
- o When creating group folders in SMB share level, you have to go to the root share and enter the root password.

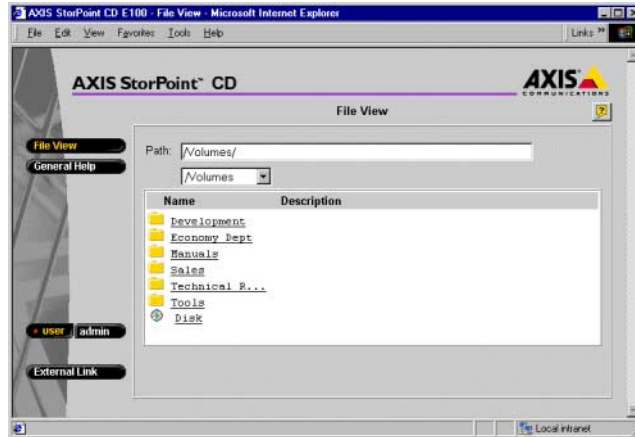
Use your Windows Explorer to organize your networked discs into folders.



1. Select the **Volumes** folders.
2. From the **File** menu, select **New|Folder** and rename the folder.
3. Move the required discs into the new folder.

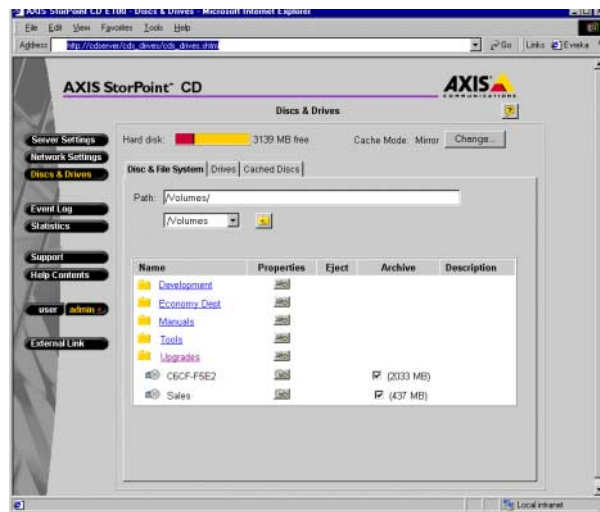
- Note:
- o It is NOT possible to copy and paste a disc into a new virtual folder, the disc must be moved into the folder, i.e. use **cut and paste** instead.

These folders can then be viewed from the File View page, and administered from the Discs & Drive page, see "Define Access Rights for Group Folders" on page 90.



Define Access Rights for Group Folders

The group folders created with your file management tool will appear on the Discs & Drive page in the Discs and File System view.



When moving a disc from the **Volumes** folder to a new group folder, shares and access rights defined for the disc will be removed. However, when moving a disc from a group folder to the **Volumes** folder or to another group folder, the disc will keep its shares and access rights.

To access and view the contents of a folder simply select the name of the required folder.

Deleting a Group Folder

A group folder must be empty before it can be deleted. Make sure than no un-finalized CD-R or CD-RW discs are accidentally left in the group folder since the contents on these discs will be deleted.

AXIS StorPoint DISCO

AXIS StorPoint™ DISCO™ is a convenient end user tool for finding and organizing networked CD/DVDs. It runs in the Windows 95/98/Me and Windows NT/2000/XP environments.



The advantages of using AXIS StorPoint DISCO are:

- You can group discs from several StorPoints,
- you get easy access from the desktop,
- and an application launcher.

However, you need to install the AXIS StorPoint DISCO software on your client.

AXIS StorPoint DISCO will gather all the discs that reside on your Axis Network Storage Servers in a single folder under **My Computer** in Windows Explorer. As the program hides the network topography, the discs will always be easy to find and access. You will no longer need to browse through the entire Network Neighborhood in order to locate the discs you are looking for. You use standard Explorer functions to manipulate the discs.

AXIS StorPoint DISCO version 2.00 is available in two types of installations:

- Standalone
- Client/Server

Standalone The standalone version gives all the users full functionality and allows all users to view all the discs on the network. For small workplaces or single users, this is the recommended setup.

Client/Server The client/server version is divided into one server part and one client part. First the administrator will install the server version locally. The administrator then organizes discs and **launch objects** (see "*Launch Objects*" on page 94) into a number of **public folders**. When the client part has been installed on the client users' computers, the user can select which public folders to use according to their needs. For larger workplaces with a central system administration and many shared discs, this is the recommended setup. See "*Client Installation*" on page 98.

Installing the Software Follow these steps to install AXIS StorPoint DISCO:

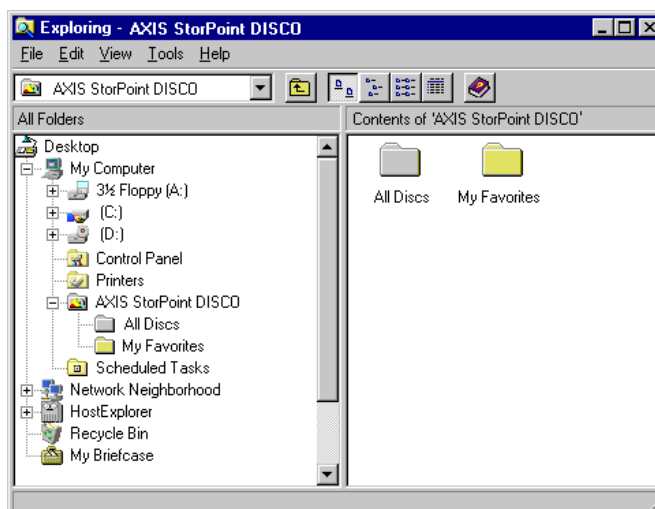
1. Locate and run the setup file, `DiscoSetup200.exe`. The software is available free of charge on the Axis web site and on the AXIS Online CD.
2. You will be asked where to unpack the setup files. Then the AXIS StorPoint DISCO Setup Welcome dialog will then be displayed.



3. Choose which setup type you want to install: Standalone or Client/Server.
4. Follow the instructions on the screen. When finished, the Installation Completed screen is displayed.

The AXIS StorPoint DISCO Folder

When successfully installed, AXIS StorPoint DISCO is available through the AXIS StorPoint DISCO folder found under My Computer in Windows Explorer.



In the standalone and server versions, the AXIS StorPoint DISCO folder originally contains two folders:

- **All Discs** - This folder lists all the CD/DVDs detected on the network.
- **My Favorites** - This folder is originally empty. It is intended for your favorite discs. It can be renamed or deleted, if desired.

New Folders To create new folders within the **AXIS StorPoint DISCO** folder, click **File | New | Folder**. Type a name for the new folder, and press **Enter**. You can copy disc titles from the **All Discs** folder to the **My Favorites** folder and to other user folders that you create under the **AXIS StorPoint DISCO** folder.

Shortcuts



To create a shortcut on your desktop to a disc, folder or launch object, right-click the item and select **Create Shortcut on Desktop**.

Finding Discs and Launch Objects

To find specific discs, folders or launch objects within **AXIS StorPoint DISCO**, click **Tools | Find Discs and Launch Objects...** in Windows Explorer.

To find a file on a disc, right-click the disc and select **Find Files on this Disc...**

Note: o You cannot search the entire network for specific files.

AXIS StorPoint DISCO Settings

To specify the program settings, click **File | AXIS StorPoint DISCO Settings**.



Note: o The dialog contents depends on which version of the **AXIS StorPoint DISCO** you are running. The example above shows the server version.

Automatic Searches

AXIS StorPoint DISCO can automatically scan the network in order to detect the most recently attached storage servers and inserted discs.

To specify how often you want **AXIS StorPoint DISCO** to perform automatic searches:

1. Click **File | AXIS StorPoint DISCO Settings**.
2. Open the **Disc Search** page, and fill in the desired values for automatic searches.


3. Click OK.

Note: o This function is not available in the client version.

Manual Searches AXIS StorPoint DISCO provides two methods to manually initiate searches on the network:

- **Quick search** – Searches the most recently inserted discs on the previously detected storage servers. Select **Quick Search** from the **View** menu.
- **Full search** - Searches the entire network for the most recently attached storage servers and inserted discs. Select **Full Search** from the **View** menu.

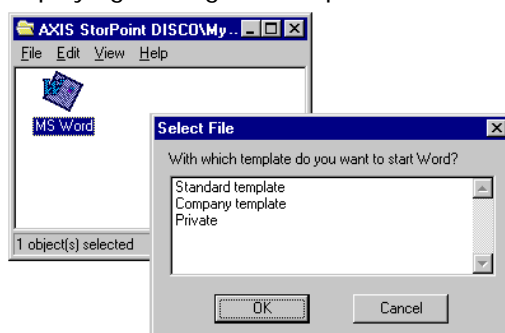
Notes: o Network searches are performed in the background without decreasing performance. However, it may take several minutes to complete a search on a large network. A full search takes more time to complete than a quick search.

o During the search, the AXIS StorPoint DISCO icon on the taskbar will change its appearance to indicate that a search is being performed. 

Launch Objects

AXIS StorPoint DISCO version 2.00 includes an application launcher that allows you to create and use **launch objects**. These launch objects are similar to Windows shortcuts, but they have much more functionality. A launch object can:

- Start programs and documents from anywhere on the network
- Automatically map and unmap drive letters
- Initiate a series of actions related to the launched application, e.g. displaying message boxes, parameter lists and file selection dialogs.



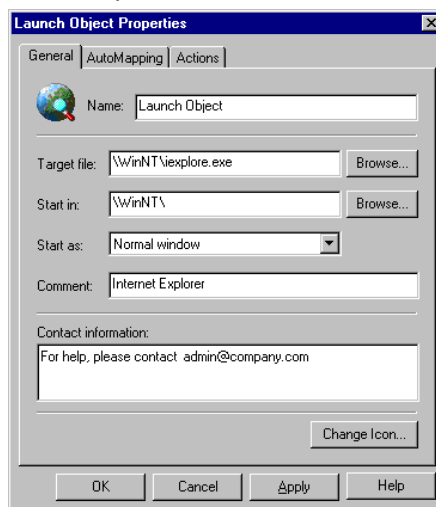
By doing this, programs can be customized to the user's needs at startup. A user might for example want to start a word processor with a specific document template and then save the result on a specific file server on the network. The launch object could then map the file server automatically and open a file selection dialog where the user selects the document template.

Creating a Launch Object

To create a new launch object:

1. Click **File | New | Launch Object** within one of your personal folders. The launch object wizard dialog appears.
2. The wizard includes three screens: **General**, **AutoMapping** and **Actions**. Click **Next** to continue to the next screen. For information on how to fill in the specific fields, click the **Help** button.

Note: o To change any of the settings later, right-click the launch object, and select **Properties**.



Mapping Discs

It is useful and sometimes necessary to assign (map) a drive letter to a shared networked resource that you connect to often. Some software will not run properly unless it finds data at root level.

Within AXIS StorPoint DISCO, drives letters can be mapped to discs manually or automatically.

Manual Mapping

To map a disc manually, follow these steps:

1. Locate the disc you want to be mapped.
2. Right-click the disc and select **Map Disc...** from the drop-down menu.
3. Select a drive letter for connecting to the disc. The next available drive letter is selected automatically. To specify a different drive letter, type the letter or select one in the list.
4. If you use the resource often, check **Reconnect at logon** to make the connection each time you start your computer.
5. Click **OK**.

Automatic Mapping

Automatic mapping (**AutoMapping**) allows mapping to be performed automatically when you access a disc. With this feature, several discs can share the same drive letter dynamically. Only the most recently accessed disc will be mapped to the drive letter.

AXIS StorPoint DISCO provides two methods for automatic mapping of your networked discs:

- General settings for all discs within an **AutoMap** folder.
- Specific settings for each particular disc within your personal folders.

- Notes:**
- o For each drive letter, only one mapping can be enabled at a time. The most recently performed mapping is the one that will be used.
 - o To quickly perform a mapping without opening the disc, right-click the disc and select **QuickMap**.
 - o Automatic mappings can also be performed within a launch object.

AutoMap Folders An **AutoMap** folder allows you to define AutoMapping settings for all the discs contained within that folder.



To create a new AutoMap folder:

1. Within the AXIS StorPoint DISCO folder, click **File | New | AutoMap Folder**.
2. The **Create New AutoMap Folder** dialog is opened. Select the desired AutoMapping option. These settings will apply to all the discs contained within this AutoMap folder.

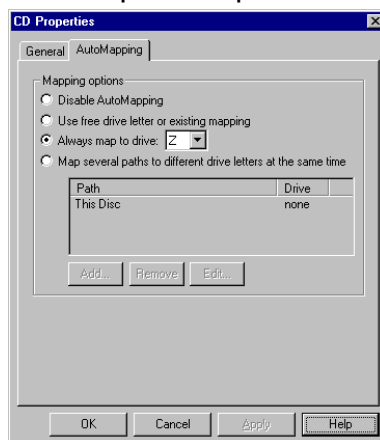
- Note:**
- o To change the settings, right-click the folder and select **Properties**. Open the **AutoMapping** page.



AutoMapping a Particular Disc To define the AutoMapping options for a particular disc:

1. Right-click the disc and select **Properties**.
2. Open the **AutoMapping** page.

3. Select the desired option by clicking the appropriate radio button. You can select **Map several paths...** to map a set of discs simultaneously.



4. Click OK.

Client Installation

To set up the client part of the client/server version, you need to carry out the following:

- Create public folders
- Edit the client setup script (optional)
- Install the client version on the client user's computers

Creating Public Folders

A public folder can contain discs and launch objects. The administrator prepares a set of folders and then makes these available as public folders. When a user selects a public folder, the folder will appear in the **AXIS StorPoint DISCO** folder on the user's computer.



To create a public folder:

1. Click **File | Public Folder Settings** to check the settings for public folders.



2. On the **Public Folders** page, make sure the network path to the public folder data is specified correctly. The location was specified during the installation. Note that the location must be reachable from the users' computers. If you want to change the path, click **Change**.
3. Click **File | New | Folder** to create a new folder.
4. Specify a descriptive name, and press **Enter**.
5. Select the new folder and click **File | Properties**.
6. On the **General** page, enter a descriptive text in the **Comment** field to indicate its content.
7. Check the **Make folder public** checkbox to make this folder available to the users.

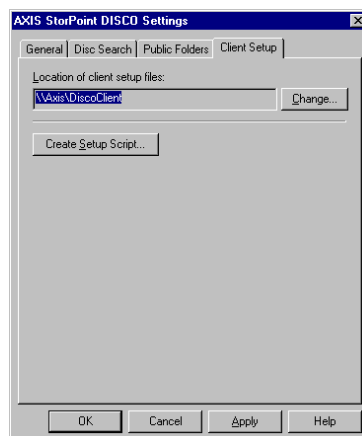
- Note:**
- o As opposed to shared folders in Windows, public folders within **AXIS StorPoint DISCO** will **not** appear in **Network Neighborhood**.

Editing the Client Setup Script

When the administrator installed the server part of **AXIS StorPoint DISCO**, the Setup program created a client setup script used for reducing the user interaction during the client installation.

To edit this script:

1. Click **File | AXIS StorPoint DISCO Settings**.
2. Open the **Client Setup** page.



3. Click the **Create Setup Script** button. A wizard will guide you through the screens in the dialog. The script is stored under the filename `sscript.ini` in the location specified at the top of the page.

- Note:**
- o If you provide all the information in the wizard, the client version can be installed with no or little user interaction. Otherwise, the user will be prompted to make the decisions during the installation.

Installing the Client Version

Notify the users about where they can find the client installation files on the network and ask them to run the installation program `Setup.exe`. Or, use your standard procedures for installing new client software on the network. The file location is specified on the **AXIS StorPoint DISCO Settings | Client Setup** page.

Extracting New Client Setup Files

The client setup files for AXIS StorPoint DISCO was created when the administrator installed the server version. In case these files become damaged, new files can be extracted without reinstalling the server program.

Follow these steps:

1. Open the Windows **Add/Remove Program** dialog.
2. Select **AXIS StorPoint DISCO** and click **Add/Remove**.
3. The **AXIS StorPoint DISCO Setup Maintenance** program is opened. Click **Modify** to generate new files.

Section 11 Hard Disk Caching

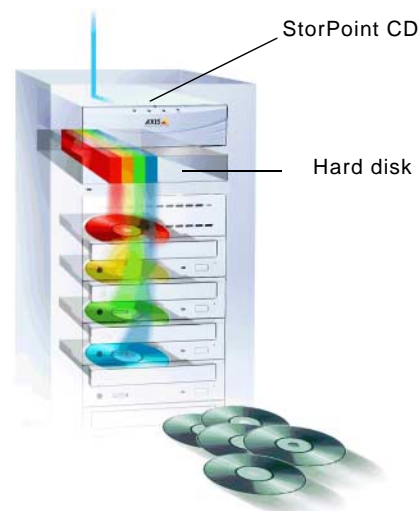
Note: ○ The Basic versions of the StorPoint CD+ do not support hard disk caching.

This section describes how to use hard disk caching with your StorPoint CD+.

Hard disk caching means that the inserted discs can be copied to a hard disk attached to the SCSI bus or the IDE bus.

The caching mechanism of the StorPoint CD+ involves both directory caching and complete mirroring (copying). It allows users to access the networked discs at hard disk speed.

You manage the hard disk caching facility via the StorPoint CD+ Web interface.



Disc Changers Because of the relatively long time needed to change discs in a changer, the data transfer rate may become unacceptably low when two users simultaneously attempt to read different discs. Hard disk caching will thus significantly increase the access speed if you are using changers.

Archiving The hard disk caching facility allows you to archive the cached discs, i.e. keep the cached discs stored on the hard disk even if the original discs are ejected from the drives. You can archive up to 255 volumes.

Capacity The number of discs that can be cached depends on the size of the hard disks as well as the size of the individual discs. About 90% of the disk space can be used for caching. For example, a 4.3 GB hard disk will allow six 650-MB discs to be cached. However, if each disc contains only 100 MB, about 38 discs can be cached on the hard disk.

A 650 MB disc is cached on the hard disk in less than six minutes.

Note: ○ Avoid turning off the power supply during hard disk caching. However, should this happen, the StorPoint CD+ will restart caching the disc/discs automatically when the power supply has been restored.

Caching Options

Hard disk caching with the StorPoint CD+ has two main purposes:

- Increasing performance
- Archiving discs on the hard disk

Performance Caching

For performance caching, you specify the cache mode on the **Server Settings | Change... | Caching** page. These options are available:

- **None** - The disc will not be cached.
- **Partial** - Information about the directory structure and files are cached on to the hard disk, but no actual data. This speeds up the directory browsing, especially with the use of disc changers. Optionally select how much space to allocate to file caching. The file cache is a separated part on a hard disk where disc files may be cached. The more hard disk space allocated to file caching, the larger files can be stored in the file cache.
- **Mirror** - A copy of the disc is created on the hard disk, and thus increasing performance, especially with multiple users or frequent access of multiple files. This method takes more time to carry out when a new disc is inserted. The mirroring will be performed in the background. Until a disc has been completely cached on the hard disk, the disc will be accessible from the disc drive. If there is not enough room on the hard disk to mirror all required discs, it is advisable to only mirror the most frequently used discs and enable the file cache. The most frequently used non-mirrored disc files will then be placed in the file cache. The file caching option is only available for Partial caching.

For more information, see "*Using Hard Disk Caching for Increased Performance*" on page 103.

Archiving Discs

The archiving option is only available from the **Discs & Drives** page:


- **Archive** - This option does the same as Mirror and in addition saves the created image on the hard disk. The archived disc is accessible to the users even if the original disc has been ejected from the drive. Archiving can be performed manually or automatically for one or more drives.

For more information, see "*Using Hard Disk Caching for Archiving Discs*" on page 104.

Verifying the Hard Disk

The caching facility requires at least one hard disk to be connected to the SCSI bus or the IDE bus. The StorPoint CD+ will automatically format hard disks and use them for hard disk caching. You can connect up to six or seven hard disks to your StorPoint CD+ depending on model.

Follow these steps to verify that a valid hard disk is connected to your StorPoint CD+:

1. Start your Web browser and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server username and password. By default, this is set to `root` and `pass`. To change the Server password, see "*Server Password*" on page 24.
3. On the **Server Settings** page, click the hard disk icon  to verify that the StorPoint CD+ has detected a hard disk that can be used for hard disk caching. Information about the hard disk will be displayed to the right.

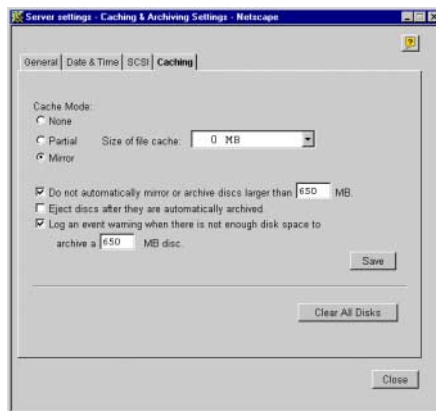
- Notes:**
- o If the hard disk has been used before and includes a partition table, it needs to be formatted before it can be used for hard disk caching. Click **Format** to do that. The formatting will remove all the information currently cached on the hard disk. This is not something you would normally want to do.
 - o On start up, if the StorPoint detects inconsistencies on the hard disk it will reformat the disk automatically. Once the hard disk is set up and verified, disable the 'AutoFormatEnabled' parameter to avoid unintentional loss of data upon reboot. This is done by editing the config.ini file and setting the [HDCache] parameter to **no** i.e. **AutoFormatEnabled = no**.

Using Hard Disk Caching for Increased Performance

To use hard disk caching to increase performance, follow these steps:

1. Start your Web browser and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server username and password. By default, this is set to `root` and `pass`. The **Server Settings** page appears.
3. Click **Change...** and select the **Caching** tab.

- Note:**
- o The **Caching** tab only appears if at least one hard disk has been connected to the StorPoint CD+.
 - 4. Select the default cache mode: **None**, **Partial** or **Mirror**. For **Partial**, select the size of the file cache from the drop down list.
 - 5. Make the required selections by checking the appropriate checkboxes. Click **Save**.



New discs will automatically be cached according to this setting when inserted.

- Notes:**
- o If the cache mode has been set to **Mirror**, but there is not enough disk space or the **Do not automatically mirror or archive discs larger than xxx MB** option has been set to smaller than the current disc size, the cache mode for the disc will be **Partial**. Consequently, some of the files on the disc may be placed in the file cache.
 - o You can click the **Clear All Disks** button to clear the hard disk cache of data.

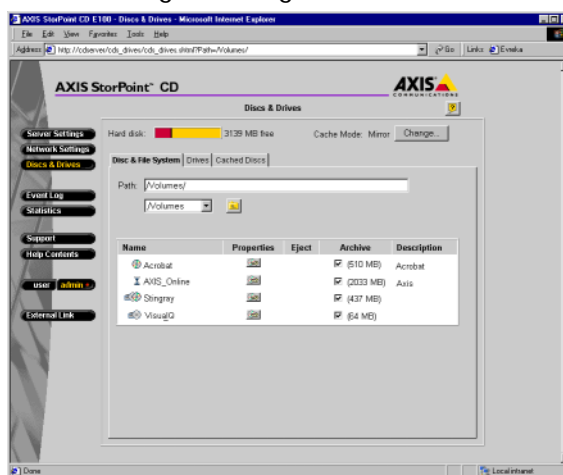
Using Hard Disk Caching for Archiving Discs

To use the hard disk caching for archiving discs, follow these steps:

1. Start your Web browser and enter the name or IP address of the StorPoint CD in the location/address field.
2. Click **admin**. You will be prompted for the Server username and password. By default, this is set to `root` and `pass`.
3. Open the **Discs & Drives** page. This page includes three views that you can select by clicking the corresponding tab:
 - Discs and File System
 - Drives
 - Cached Discs






The Discs and File System View

Manual archiving is managed from the Discs and File System view.






The Hard disk bar at the top of the page shows how much of the total hard disk space that is currently being used for archived copies and cached data. The free space available for archiving new discs is noted next to the bar. If you have more than one hard disk attached to the StorPoint CD+, the size of the largest disc that can be archived will be displayed below the bar. For more information about free hard disk space, go to the **Statistics** page.

The table lists:

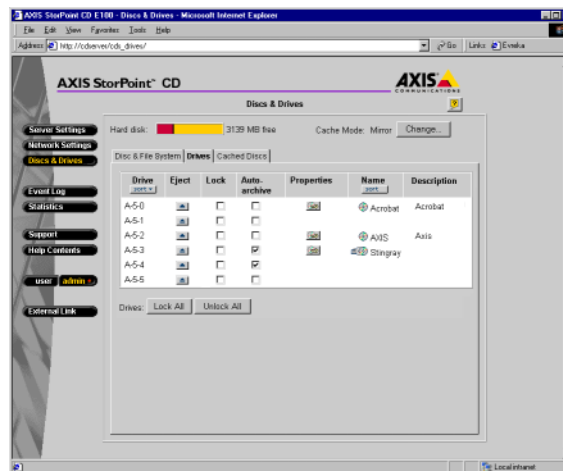
-  inserted discs
-  inserted archived discs
-  archived discs that are currently not inserted
-  inserted mirrored disc
-  discs that are currently being cached.

Note: Discs with multiple file systems are displayed as two discs in the Discs and File System view.

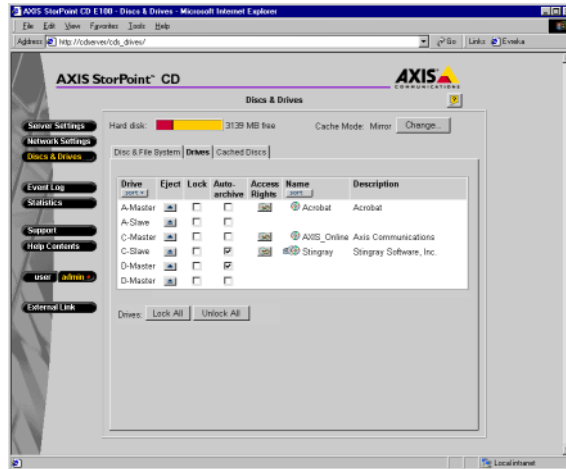
- Manual Archiving** Check the **Archive** checkbox to copy the disc to the hard disk. Unarchiving a disc causes it to go back to the global setting mode.
- Note:** o This checkbox only appears if there is a hard disk connected to the StorPoint CD+.
- Properties** Click the **Properties** icon to display the **Properties** dialog box where you can set properties such as sharing options, user limits and access rights. Click  to set the access rights for the root or the volumes folder. Click  to set the access rights for the disc.
- Eject** Click  to eject a disc. Note that the disc will be ejected even if the disc is in use or the drive is locked. However, a message will be displayed if you try to eject a disc that is currently in use.
- Note:** o This function does not apply to changers.
- Description** Add a text describing the disc contents in the **Properties** dialog box. Display this dialog box by clicking the **Properties** icon.

The Drives View

Automatic archiving is managed from the Drives view.





SCSI Server - the Drive column lists all the drives by SCSI ID. In case of a Dual SCSI server, A or B will be displayed to indicate which bus the drive is connected to. If a LUN based device like a changer is attached, the LUN will also be displayed. "A-6-0" indicates SCSI ID 6, LUN ID 0 on bus A.





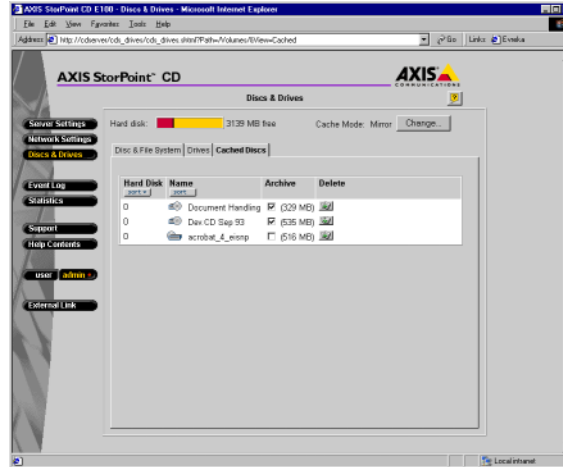
IDE Server - the Drive column lists all the drives by location. If a LUN based device like a changer is attached, the LUN will also be displayed. "A-Master-0" indicates the device connected as Master, LUN ID 0 on bus A.

- Note:
- o Discs with multiple file systems are displayed twice with the same drive number in the Drives view.

- Automatic Archiving** Check the **Auto-archive** checkbox to automatically archive all discs that will be inserted into this drive.
- Note:** o This checkbox only appears if there is a hard disk connected to the StorPoint CD+.
- Eject** Click  to eject a disc. Note that the disc will be ejected even if the disc is in use or the drive is locked. However, a warning message will be displayed if you try to eject a disc that is currently in use.
- Lock** Check the **Lock** checkbox to lock a drive. At the bottom of the page, you can click **Lock all** or **Unlock All** to affect all the drives simultaneously. When the drive is locked it cannot be ejected with the eject button on the physical drive. However, it can still be ejected from the **Discs & Drives** page.
- Sorting** Click **Sort** to sort the items by Drive or Name, respectively.
- Properties** Click the **Properties** icon to display the **Properties** dialog box where you can set properties such as sharing options, user limits and access rights. Click  to set the access rights for the disc.
- Note:** o You can click the **Stop Archiving** button to immediately interrupt all current caching jobs. To restart archiving, check the appropriate Archive/Auto-archive checkbox(es) again.
- Shared Drive** Click the **Properties** icon to display the **Properties** dialog box. Select if you want to use the access rights and properties of the Disc or the Drive by checking the appropriate checkbox. By selecting **Drive**, all discs inserted into the drive become accessible under the drive's name and inherit the drive's access rights and properties.
- Notes:** o When a disc is inserted into a shared drive and then is archived, the disc copies the drive's access rights but keeps its original name.
- o When a disc in a shared drive is archived, or if a previously archived disc is inserted into a shared drive, the drive icon will indicate that the disc in the drive is not accessible under the drive's name. This is because the disc is already archived under its original name.

The Cached Discs View

This view provides an overview of all cached  and mirrored  discs that are not inserted.




When an un-inserted mirrored disc is deleted it is removed from the list on this view.

Note:

- o The IDE Server will list the location of the hard disks, e.g. A-Master.

Hard Disk Full

If a hard disk becomes full and you want to cache another disc, you must first free some space on the hard disk. To do this, go to the Discs & Drives page, select the Discs and file system view and locate an archived disc that is currently not inserted . Uncheck the **Archive** checkbox. Consequently, this disc will no longer be accessible to the users.




Section 12 Monitoring the StorPoint CD+

This section describes the following monitoring tools:

Tools	See ...
Event log	page 109
Statistics	page 110
E-mail	page 111
SNMP	page 111
AXIS ThinWizard - a tool for locating and managing all the AXIS servers on your network	page 113

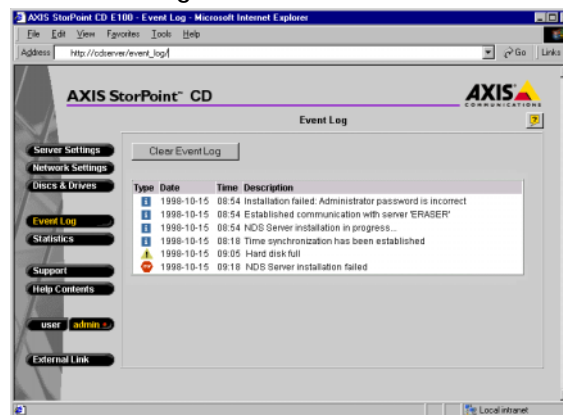
Event Log

The event log is stored in the `logfile.txt` file located in the `System/ServerProperties` folder. In the event log, the StorPoint CD+ writes information such as:

-  Information, e.g. completed tasks
-  Warnings, e.g. hard disk full
-  Errors, e.g. installation failures

To display the event log, follow these steps:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the password, see "*Server Password*" on page 24.
3. Click **Event Log**.



All events are viewed in the same order as they entered the log.

- Notes:
- o If a synchronization source has been found or if the correct date and time have been set manually, date information will appear in the log file.
 - o When the server is restarted, a sub-set of critical events will remain in the event log.
 - o Click **Clear Event Log**, to clear the event log of events.

Statistics

To display the statistics:

1. Start your Web browser, and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `paSS`. To change the server password, see "*Server Password*" on page 24.
3. Click **Statistics**.




The StorPoint CD+ presents statistics such as:

- Server up-time.
- Cache hit ratio in the RAM cache.
- List of users who are currently connected to the StorPoint CD+ in each particular network environment.
- Available space on the attached hard disk(s).
- List of cache state and the number of times a disc has been accessed.

Note: ○ The hard disk information appears only if you have attached a hard disk to the SCSI bus or the IDE bus.

E-mail (SMTP)

To specify the settings for your e-mail facilities:

1. Start your Web browser and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the server password, see "*Server Password*" on page 24.
3. Click **Network Settings** within the Administration Web pages.
4. Click **Detailed View** . The **Protocols** dialog box appears.
5. Select the **E-mail (SMTP)** tab. Specify the settings for the mail server.
6. Enter the Administrators e-mail address.
7. Select mail log events from the **Mail Log Events** drop down list. These will be sent to the e-mail address specified above. Click **OK**.

SNMP

You can use SNMP (Simple Network Management Protocol) for remote monitoring of the StorPoint CD+.

General Information SNMP refers to a set of standards for network management, including a protocol, a database structure specification, and a set of data objects. The StorPoint CD+ SNMP implementation runs in the TCP/IP environment.


The management is handled by NMS (Network Management System) software running on a host on your network. The NMS software communicates with network devices by the means of messages, which are references to one or more objects.

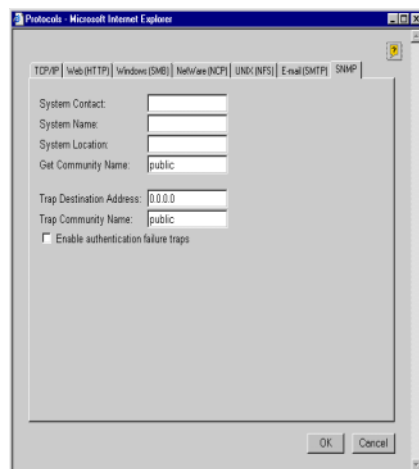
A message can be a question or an instruction to a device, or an alarm triggered by a specific event in a device.

System Requirements In order to make full use of the SNMP support, you will need an NMS software that allows you to install private enterprise MIBs.

SNMP Settings To configure your StorPoint CD+ for SNMP:

1. Start your Web browser and enter the name or IP address of the StorPoint CD+ in the location/address field.
2. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`. To change the server password, see "*Server Password*" on page 24.
3. Click **Network Settings**.

4. Click Detailed View  .
5. Select the SNMP tab.



6. Specify the settings, and click OK.

AXIS ThinWizard

AXIS ThinWizard provides a convenient interface for locating and managing all the AXIS servers on your network. AXIS ThinWizard runs on Windows NT/2000/XP, Windows 95/98/Me and UNIX.

- Note:
- o AXIS ThinWizard requires the IP address of your StorPoint CD+ to be set. Refer to "Assigning an IP Address" on page 12.

Installing AXIS ThinWizard The AXIS ThinWizard is included on the AXIS Online CD. The required software can also be downloaded from the Axis Web Site free of charge. An installation wizard will guide you through the installation procedures.

Accessing AXIS ThinWizard Follow these steps to access the AXIS ThinWizard:

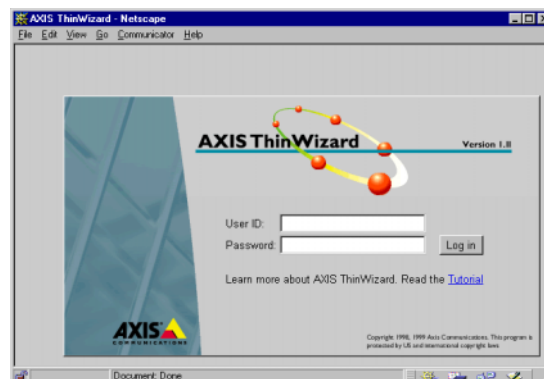
1. Make sure an AXIS ThinWizard server is running on your network.
2. Start the Web browser and enter the name or IP address of the AXIS ThinWizard server in the location/address field. If the AXIS ThinWizard server is installed on a port other than port number 80, you must add the port number to the URL:

```
http://<IP address>:<port number>/
```

Example:

```
http://192.16.253.80:8011/
```

3. The AXIS ThinWizard start page appears.



4. Enter your user ID and password and click Log in.

Creating a Network Group

Before you can access your StorPoint CD+ via AXIS ThinWizard, you must first create an appropriate network group. A network group is defined by the specific IP address ranges and server types i.e. storage servers, print servers etc. that are included.

Follow these steps to create a network group:

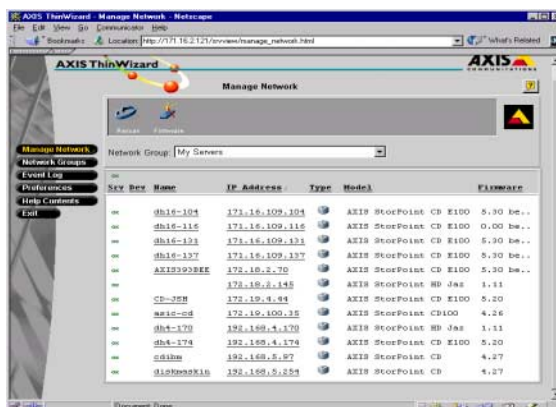
1. Click **Network Groups** in the AXIS ThinWizard main menu.
2. Click **Create**.
3. The **Create Network Group** page opens. Type a name for the new network group.
4. Specify the IP address ranges and AXIS server types to be included in the network group. If you are only interested in storage servers, deselect all options but the **Storage Servers** option.
5. Click **OK** to create the network group.

Note: ○ You can create as many network groups as you need.

Accessing the StorPoint CD+

Follow these steps to access the StorPoint CD+ Web pages via AXIS ThinWizard:

1. Click **Manage Network** in the AXIS ThinWizard main menu.
2. Select the network group that includes your StorPoint CD+ from the pull-down list.
3. All the detected AXIS servers included in the network group are listed.



4. Click the **IP Address** link of your StorPoint CD+. The StorPoint CD+ File View page appears.

Note: ○ The AXIS ThinWizard can also be used for upgrading the StorPoint CD+ software. Refer to "Upgrading the Firmware" on page 142.

Appendix A Parameter List

This section includes the StorPoint CD+ parameter list. It also explains the StorPoint CD+ directory structure and how to edit the configuration settings.

The Configuration File

This table shows the parameter list stored in the `config.ini` file located in the `System/ServerProperties` folder, see the "Directory Structure" on page 121. The middle column shows the default values, when applicable. The right-hand column gives a brief description of the parameters.

Note: o Parameters denoted by an asterisk (*) are not available in the Basic versions of the StorPoint CD+.

Parameter name	Value	Description
[Server]		
HardwareAddress	= 00:40:8c:11:00:86	The StorPoint CD+ hardware address. Default is the <i>serial number</i> . You can set a Locally Administrated Address. The value shown is an example only.
Date	= 99-11-01	yy-mm-dd, enter the date followed by ! to set manually
Time	= 12:00:00	hh:mm:ss, enter the time followed by ! to set manually
FactoryDefaults	= no	Set to <i>configuration, volumeProperties</i> or <i>all</i> .
Restart	= no	Set to <i>yes</i> to restart the StorPoint CD+.
TimeZone	= UTC	Must be set to the time zone that the StorPoint CD+ is operating in. Refer to "Time Zone Parameter Values" on page 120.
TimeSyncSource	= NDS	Specifies the time source for the StorPoint CD+. Set to <i>NDS</i> for NetWare IPX. Set to <i>NTP</i> for NetWare PureIP, UNIX and SMB over TCP/IP. Note that you will need third party software on your Windows NT server to obtain support for NTP. Set to <i>None</i> for manually setting the time.
ServerPassword	= pass	The Supervisor, Administrator or Root user password used for basically all protocols; i.e. HTTP, NetWare bindery, SMB user level, SNMP and FTP. Once written into the configuration file, the password will not be shown but replaced with *, representing each letter of the password.
Shut Down	= no	Set to <i>yes</i> to shut down the StorPoint CD+.
NetworkSpeed	= auto	The network speed. Set to <i>10, 100</i> or <i>auto</i> . Default is <i>auto</i> , which means that it is automatically detected by the StorPoint CD+.
NetworkDuplex	= auto	The network duplex. Set to <i>full, half</i> or <i>auto</i> . Default is <i>auto</i> , which means that it is automatically detected by the StorPoint CD+.
CDWritePassword*	=	Optional password used for protecting the Recordable Discs page. Set to <i>yes</i> or <i>no</i> .
UseCDWritePassword*	=	Used when protecting the Recordable Discs page with an optional password. Set to <i>yes</i> or <i>no</i> .
DBCSEncoding	= None/BIG5/GB/KSC /Shift-JIS	BIG5 = Chinese traditional, used in Taiwan. GB = Chinese simplified, used in China. KSC = Korean. Shift-JIS = Japanese.
[SCSI]		
SCSITermination	= on	Always <i>on</i> .
JukeBoxLockTime	= 0	Specifies the maximum duration for a data read operation during multiple access requests to prevent disc changer fluttering. Default is <i>0</i> seconds which disables the function.

Parameter name	Value	Description
Disconnect_Reselect	= on	Set to <i>off</i> to disable the disconnect/reselect function in the disc drives.
BusMode	= Asynchronous	Specifies the transfer mode on the SCSI bus: <i>Asynchronous</i> , <i>Synchronous</i> , <i>Fast-10</i> or <i>Ultra</i> .
[IDE]		
JukeBoxLockTime	= 0	Specifies the maximum duration for a data read operation during multiple access requests to prevent disc changer fluttering. Default is 0 seconds which disables the function.
StandbyTimer	=1800	Specifies the number of seconds of idle time before a hard disk drive will enter stand-by (power saving) mode. Note: a restart is necessary for this setting to take effect.
IDEBootDelay	=15	Specifies the number of seconds devices are allowed to wake up before device identification is started. The valid range is 5 through 30 seconds.
[IP]		
InternetAddress	= 192.36.253.80	The StorPoint CD+ IP address
DefaultRouter	= 0.0.0.0	The IP address for the default router. All traffic directed outside the local network (according to the NetMask) is sent to the default router. Any re-routing via other routers is done automatically. The default 0.0.0.0 indicates that no default router is set.
NetMask	= 0.0.0.0	Used to determine when the traffic should be sent via a router. For example, the normal class C mask is 255.255.255.0. The default 0.0.0.0 indicates that automatic router sensing is used.
BOOTPEnable	= yes	Enables BOOTP IP address setup.
DHCPEnable	= yes	Enables DHCP IP address setup.
RARPEnable	= yes	Enables RARP IP address setup.
DomainName	=	Name of the domain to which the StorPoint CD+ belongs.
PrimaryDNS	= 0.0.0.0	The IP address of the primary DNS server. Used for identifying computers with names instead of IP addresses.
SecondaryDNS	= 0.0.0.0	The IP address of the secondary DNS server, should the primary DNS server be unavailable or disconnected.
NTPServer	=	Name or IP address for the NTP server.
EnableWINS	= no	Enables WINS over NetBIOS/TCP/IP.
PrimaryWINSserver	= 0.0.0.0	The IP address of the primary WINS server.
SecondaryWINSserver	= 0.0.0.0	The IP address of the secondary WINS server, if required.
ProtectIP	= no	Protects the StorPoint CD+ from changing the IP address using the ARP or Web browser method. Default is <i>no</i> , which allows the IP address to be set within 30 minutes from restart.
SLPDirectoryAgent1	= auto	The IP address or DNS name of an SLP directory agent.
SLPDirectoryAgent2	= auto	The IP address or DNS name of an SLP directory agent.
SLPScopeList	= DEFAULT	The SLP scope to which the StorPoint CD+ belongs. SLP scopes are used for collecting services into logical or administrative groups. Specify the scope names in a list separated by commas, i.e. <i>scope1,scope2,scope3...</i> The default value <i>DEFAULT</i> means that no specific scope will be configured.
[HTTP]		
HTTPEnable	= yes	Enables HTTP. Set to <i>no</i> to restrict users from accessing the CD-ROMs from a Web browser.
EnableMediaAccess	= yes	Enables access to the inserted discs. When set to <i>no</i> , only administration is available from HTTP.
ExternalLink	=	Specifies the URL to a customized link, e.g. to your company's Web site. The link will be available from the StorPoint CD+ Web interface.
ExternalImage	=	Specifies the URL to the image that will indicate the customized external link.
[FTP]		
FTP User name	=	Alternative user name for accessing the StorPoint CD+ Volumes folder via FTP.
FTP User password	=	Once written into the configuration file, the password will not be shown but replaced with *, representing each letter of the password.

Parameter name	Value	Description
Timeout in seconds	= 0	The time of inactivity in seconds after which an FTP is closed down.
FTP Max Users	= 10	The maximum number of simultaneous FTP sessions.
[SMB]		
SMBEnable	= yes	Enables SMB.
ServerName	=	The server name in the SMB environment. Default is <i>AXIS<nnnnnn></i> where <i>nnnnnn</i> are the last six digits of the serial number.
ServerPassword	= pass	The Supervisor, Administrator or Root user password used for basically all protocols; i.e. HTTP, NetWare bindery, SMB user-level, SNMP and FTP. Once written into the configuration file, the password will not be shown but replaced with eight <i>*</i> 's, representing the password.
Domain/GroupName	=	Name of the StorPoint CD+ workgroup in SMB. If not specified, the StorPoint CD+ will appear in the workgroup that comes first in alphabetical order.
SecurityMode	= shareLevel	Specifies the security mode used in SMB: <i>userLevel</i> or <i>shareLevel</i> .
NTDomainInstallation	= no	Set to <i>yes</i> when you want to install the StorPoint CD+ in an NT domain.
User Account	=	Enter user Account in config.ini file if domain denies anonymous login.
User Password	=*****	Password for domain user account.
EnableNBT	= yes	Enables SMB over NetBIOS/TCP/IP.
NBTscopeID	=	Defines the NetBIOS scope to which the StorPoint CD+ belongs.
EnableNetBEUI	= yes	Enables SMB over NetBIOS/NetBEUI.
NetBEUIFrameType	= auto	If set to <i>auto</i> , 802.2 or DIX will automatically be selected by scanning the network. If required, the frame type can also be set to either <i>802_2</i> or <i>dix</i> .
Enable Oplock	=yes	Enables support for opportunistic locks, a performance enhancing mechanism that allows clients to cache data locally.
[NFS]		
NFSEnable	= yes	Enables NFS.
DefaultUid	= -2	Default user id to be used when authenticating PCNFSD clients. Disable by setting the parameter to 0 (zero).
PCNFSDAuthentServer	= 0.0.0.0	The IP address of the PCNFSD authentication server used for authenticating PCNFSD clients. The default 0.0.0.0 disables the function.
ExportVolumes	= yes	Enables export of each new disc inserted as a mount point. If you restore the factory default settings, all the currently inserted discs will be exported.
LowerNonCase	= yes	Set to <i>yes</i> to displays non-case sensitive file systems in lower case.
[SNMP]		
GetCommunityName	= public	Specifies the community that has read only access to all supported SNMP objects except writeCommunity, SupervisorPassword and ftpPassword. It corresponds to the readCommunity SNMP object.
TrapDestination	= 0.0.0.0	Specifies the IP address which SNMP traps are sent to. It corresponds to the trapAddress SNMP object. Default is 0.0.0.0, i.e. all SNMP traps are disabled.
TrapCommunityName	= public	Specifies the community for all generated SNMP traps. It corresponds to the trapCommunity SNMP object.
SystemContact	=	Optional entry which should be in plain text and may be used to show the name of the system contact person.
SystemName	=	Optional entry which should be in plain text and may be used to show the name of the location of the system.
SystemLocation	=	Optional entry which should be in plain text and may be used to show the name of the location of the system.
AuthenticationTrap	= disabled	Disables the SNMP authentication failure traps. It corresponds to the snmpenableAuthenTraps (MIB-II) SNMP object.
[NetWare]		
NWEnable	= yes	Enables NetWare support.
IPXEnable	= yes	Enables the IPX protocol.
Frame_802_2	= auto	Enables the 802.2 frame type.
Frame_802_3	= auto	Enables the 802.3 frame type (Ethernet versions only).

Parameter name	Value	Description
Frame_EthernetII	= auto	Enables the Ethernet II frame type (Ethernet versions only).
Frame_SNAP	= auto	Enables the SNAP frame type.
NetWareIP_Enable	= no	Enables NCP over IPX/UDP (NetWare/IP).
NetWareIP_DSS_Server	=	The IP address of the DSS server.
PureIPEnable	= yes	Enables NCP over TCP/IP (PureIP).
ServerName	= AXIS<nnnnnn>_NW	NetWare server name to be presented to the NetWare clients. Default is AXIS<nnnnnn>_NW where <i>nnnnnn</i> are the last six digits of the serial number.
InternalNetAddress	= nn-nn-nn-nn	Internal network address. Default is <i>nn-nn-nn-nn</i> where <i>nnnnnnnn</i> are the last eight digits of the serial number.
BurstMode	= on	Enables burst mode.
ShowAllVolumes	= yes	Shows all drives and discs also at SYS level.
BinderyEnable	= yes	Enables bindery mode login. When using NDS, set to <i>no</i> to increase system security. The Supervisor can always login in bindery mode even if this parameter is set to <i>no</i> .
BindAuthentication	=	Name or IP address of the server used for authenticating clients.
NDSEnable	= yes	Enables NDS mode.
NDS_TreeName	=	Name of the tree where you wish to install the StorPoint CD+.
NDS_ServerContext	=	Distinguished name of the context in the NDS tree where you wish to install the StorPoint CD+, e.g. <i>Corp.Acme</i> .
NDSAdminName	=	Distinguished name of a user or administrator with Supervisor or Create rights to the context where you want to install the StorPoint CD+, e.g. <i>Admin.Acme</i> .
NDSAdminPassword	=	Password for the administrator defined in NDSAdminName. Once written into the configuration file, the password will not be shown but replaced with *'s, representing each letter of the password.
NDSInstall	= no	Set to <i>install</i> when you are ready to install the StorPoint CD+ in NDS, or <i>forced</i> to overwrite the NDS server object.
NDSRightsStorage	= NDS	Set to <i>NDS</i> to store the access rights in the NDS tree. Set to <i>File</i> to store the access rights in a file on the Novell server. This is necessary if you do not allow schema extensions in your NDS tree, or if you do not have Supervisor access rights. Set to <i>Local</i> to store access rights locally in the StorPoint CD+.
NDSRightsFile	=	If you have set NDSRightsStorage to <i>File</i> , specify the whole path to the file on the Novell file server using this syntax: <i>SERVER/VOLUME:DIR/.../FILE.DAT</i> where <i>SERVER</i> is a NetWare server name or IP address. The specified directory must exist and the StorPoint CD+ must have Read, Write, Create, Erase, Modify and File Scan rights. The StorPoint CD+ will create the file once you start adding trustees.
TimeSyncSources	= SAP	If IPX is enabled, use <i>SAP</i> or a list of time servers containing NDS server names. If PureIP is enabled, use a list of time servers containing IP addresses, DNS names or NDS server names.
[AFP]		
AFPEnable	= yes	Enables AFP.
AppleTalk_Enable	= yes	Enables AFP over AppleTalk.
AFPIP_Enable	= yes	Enables AFP over TCP/IP.
ServerName	=	The server name in the AFP environment. Default is <i>AXIS<nnnnnn></i> where <i>nnnnnn</i> are the last six digits of the serial number.
ZoneName	=	The zone name to which the StorPoint CD+ server belongs.
AuthenticationServer	=	Name of the server used for authenticating clients.
AuthenticationEnable	= no	Enables the authentication server. Default is <i>no</i> .
[SMTP]		
Primary Mail Server	= mail	Name or IP address of the primary mail server.
Secondary Mail Server	=	Name or IP address of the secondary mail server.
Administrator Address	=	The administrator's e-mail address.
Mail Log Events	= no	<i>No</i> means that no log events will be sent via e-mail to the administrator. <i>Error</i> means that only errors will be sent to the administrator. <i>Warning</i> means that only warnings will be sent to the administrator. <i>All</i> means that all logged events will be sent via e-mail to the administrator.

Parameter name	Value	Description
[HDCache]* CacheMode*	= mirror	The default caching method to be used each time you insert a new disc in one of the drives. <i>None</i> means no caching. <i>Partial</i> means that the directory structure is cached to allow fast file browsing. <i>Mirror</i> means complete caching. The hard disk will contain a complete copy of the mirrored disc.
ClearAllDisks*	= no	Set to <i>yes</i> to remove all information from the hard disk.
EnableMaxAutoArchiveSize*	= no	Set to <i>yes</i> to enable the <i>Max Auto Archive Size</i> option.
MaxAutoArchiveSize*	= 650	Specifies the maximum disc size to auto archive.
AutoEject*	= no	Set to <i>yes</i> to enable the <i>Auto Eject</i> function.
EnableLowDiskWarning*	= yes	Set to <i>no</i> to disable the <i>Low Disk Warning</i> option.
LowDiskTreshold*	= 650	Specifies for which disc size a low disk warning shall be displayed.
FileCacheSize*	= 0	Specifies how much of the disk space to use for caching. Default is 0 which disables the function.
AutoFormatEnabled*	=yes	If enabled, hard disks with no recognizable file system will be automatically formatted at start-up time. Disabling auto format can help clarify the reasons for a hard disk or file system crash, should one occur.
[CD Writing]* Finalize with UDF*	= no	If enabled, finalized CD-R/RWs will include the UDF (Universal Disk Format) file system, as well as the defaults ISO 9660 and Joliet. Note: Some operating systems may have problems reading disks with UDF.
[END]		

Note: Parameters denoted by an asterisk (*) are not available in the Basic versions of the StorPoint CD+

Time Zone Parameter Values

This table lists the time zone as the number of hours +/- UTC.

Table 1:

TimeZone parameter value	Hours +/- UTC	TimeZone parameter value	Hours +/- UTC
UTC	0	GB_Eire	0
UTC+1_(No_DST)	1	Western_Europe	0
UTC+2_(No_DST)	2	Iceland	0
UTC+3_(No_DST)	3	Central_Europe	1
UTC+4_(No_DST)	4	Poland	1
UTC+5_(No_DST)	5	Eastern_Europe	2
UTC+6_(No_DST)	6	Turkey	3
UTC+7_(No_DST)	7	Western_Russia	3
UTC+8_(No_DST)	8	US_CAN_Eastern	-5
UTC+9_(No_DST)	9	US_CAN_Central	-6
UTC+10_(No_DST)	10	Saskatchewan	-6
UTC+11_(No_DST)	11	US_CAN_Mountain	-7
UTC+12_(No_DST)	12	US_Arizona	-7
UTC-1_(No_DST)	-1	US_CAN_Pacific	-8
UTC-2_(No_DST)	-2	US_Alaska	-9
UTC-3_(No_DST)	-3	US_Aleutian	-10
UTC-4_(No_DST)	-4	Cuba	-5
UTC-5_(No_DST)	-5	Egypt	2
UTC-6_(No_DST)	-6	Libya	1
UTC-7_(No_DST)	-7	Sudan	2
UTC-8_(No_DST)	-8	Tunisia	1
UTC-9_(No_DST)	-9	Brazil_Noronha	-2
UTC-10_(No_DST)	-10	Brazil_Sao_Paulo	-3
UTC-11_(No_DST)	-11	Brazil_Manus	-4
UTC-12_(No_DST)	-12	Brazil_Rio_Branco	-5
		Chile	-4
		Chile_Easter_Isl	-7
		Paraguay	-4
		Aust_Adelaide	9h30m
		Aust_Darwin	9h30m
		Aust_Hobart	10

UTC = Universal Time Coordinated, which used to be known as Greenwich Mean Time (GMT), i.e. the local time at the Greenwich meridian (zero degrees longitude).

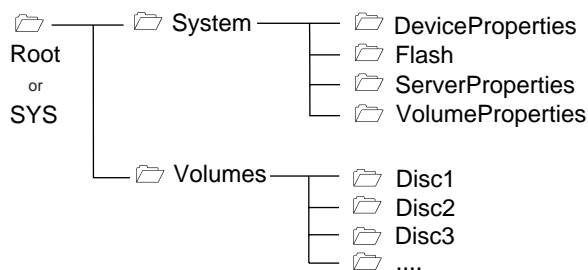
Table 1:

TimeZone parameter value	Hours +/- UTC	TimeZone parameter value	Hours +/- UTC
UTC	0	GB_Eire	0
		Aust_Perth	8
		Aust_Sydney	10
		New_Zealand	12
		Afghanistan	4h30m
		Armenia_Azer	4
		Burma	6h30m
		China_PRC	8
		India	5h30m
		Iran	3h30m
		Iraq	3
		Jordan	2
		Kazak_Kirgi	6
		Lebanon	2
		Syria	2

DST = Daylight Saving Time. No_DST means that automatic adjustment for DST is not included. The parameter values shown to the right include adjustments for DST.

Directory Structure

The StorPoint CD+ will appear to your system as a file server. Like any other file server it has a directory structure where files are stored. The directory structure of the StorPoint CD+ is outlined below:



The purpose of each folder is explained on the following pages.

The System folder

The System folder includes configuration information about the StorPoint CD+, e.g. configuration settings, connected drives, inserted discs, access rights etc. It contains these subfolders:

- **DeviceProperties** - Includes one text file for each connected drive, i.e. CD/DVD-ROM drives and hard disks.
- **Flash** - When updating the firmware, the file with the latest firmware version is copied into this subfolder.
- **ServerProperties** - Includes the configuration parameter list, event log and statistics files.
- **VolumeProperties** - When a disc is inserted into a connected drive, a text file for that disc will be created. If specified, the volume name will be used. If no volume name has been specified, the volume label will be used instead. If the disc does not have a volume label, the StorPoint CD+ will use a unique eight digit number. If the disc is blank or uses an unknown file system, the text file will be named `unknown##.txt`.

The Volumes Folder

When a disc is inserted into a connected drive, a subfolder for that volume will be created in the Volumes folder. The files on that disc are accessed through this folder. By default, the Volumes folder is available to all users. However, the Administrator can set a password to protect it.

The names of the subfolders found under the Volumes folder will comply with the following rules:

- If the Administrator has specified a volume name, this name will be used.
- If no volume name has been specified, the volume label held on the disc will be used.
- If the disc does not have a volume label, and no volume name has been set, the StorPoint CD+ will automatically allocate a name of the form cd_<nnnnnnnn>, where <nnnnnnnn> is a unique eight digit number.
- If two inserted discs have the same volume name, the StorPoint CD+ will add the suffix _a to the name of the second one. If two inserted discs are identical, the StorPoint CD+ will mount only the first one.

Often the volume label is not a good representation of the disc contents. A volume name is a convenient way of setting a more significant or recognizable name.

- Important!**
- o If you wish to run an application that is stored on a disc or searches for its associated files on a disc, you cannot set a volume name because the application will not recognize that name.

Editing the Configuration Parameters

Web Browser

If your network supports TCP/IP, you can display and edit the StorPoint CD+ parameter list using a standard Web browser:

- Netscape Navigator version 4.08 or higher, or
- Internet Explorer version 4.0 or higher

- Note:**
- o You must first assign a valid IP address as described in "*Assigning an IP Address*" on page 12.

To access the StorPoint CD+ Home Page from your Web browser, you simply enter the URL of the StorPoint CD+, i.e. the name or IP address, in the location/address field.

Example:

`http://192.16.253.80`

FTP You can retrieve the configuration parameters of your StorPoint CD+ using the File Transfer Protocol (FTP). FTP is supported by most operating environments.

Follow these instructions:

1. Log in to the StorPoint CD+ with the command:

```
ftp <IP address>
```

where <IP address> is the name or IP address of your StorPoint CD+.

2. You will be prompted for user id and password. Use the user id `root`, which has the default password `pass`.
3. *Windows 95 only*: Change directory not to overwrite any of your system files. See the caution note below.
4. Change to the directory where the configuration file is located:

```
cd System/ServerProperties
```

5. To access the configuration file, type:

```
get config.ini
```

6. Edit the `config` file using any text editor. In the Windows 95/98 and Windows NT environments, you can for example use Notepad. Once the editing is complete, save the file as `config`.
7. To upload the configuration file to the StorPoint CD+, type

```
put config.ini
```

8. To exit FTP, type the command `quit`, `bye`, or `exit`.

- Caution!**
- o Windows 95 has a directory called `config` that contains important system files. It is therefore important to change to another directory using the `cd` command before modifying your StorPoint CD+ configuration file from within the Windows 95 environment. Failure to do this may result in some of your system files to be overwritten.

Text Editor

If you do not have TCP/IP on your network, you can edit the StorPoint CD+ parameter list and access control parameters via the text files. Use your preferred text editor to make updates to the files.

You submit the new settings to the StorPoint CD+ by simply saving the files. To activate the new settings it is necessary to restart the StorPoint CD+. You can do this by setting the Restart parameter to `yes`.

Important!

- o Do not restart the StorPoint CD+ in the middle of the NDS installation.

Configuration Settings

The StorPoint CD+ configuration settings are stored in the `config.ini` file located in the `System/ServerProperties` folder.

Example:

```
; AXIS StorPoint CD+ Parameter List, V6.00

[Server]
HardwareAddress      = 00:40:cc:24:c3:0c
Date                 = 99-11-01
Time                 = 08:54:37
FactoryDefaults      = no
Restart              = no
TimeZone             = UTC
TimeSyncSource       = None
ServerPassword       = *****
Shut Down            = no
NetworkSpeed         = auto
CDWritePassword      = *****

[SCSI]
SCSITermination     = on
JukeBoxLockTime     = 0
Disconnect_Reselect = on
BusMode              = Asynchronous

[IP]
InternetAddress      = 192.16.253.80
DefaultRouter        = 192.16.1.1
NetMask              = 255.255.0.0
BOOTPEnable          = yes
DHCPEnable           = yes
RARPEnable           = yes
...
```

Access Control Parameters

The StorPoint CD+ access control parameters are stored in separate text files for each shared resource. These text files are located in the `System/VolumeProperties` folder.

Notes:

- o The text files cannot be used for setting up access rights for NetWare. Instead, you can use standard NetWare tools such as NWAdmin or Filer.
- o The text files cannot be used for setting up NT user-level rights for SMB. Instead, you can use the Windows NT Explorer.

Example:

```
...
; Explanations:
;   [W] - Writable
;   [R] - Read-only

--- Identification ---
[R] Volume name = Root
[R] Volume label = Root
[R] Volume serialnumber = 00000001
[W] Volume description =
...
; Access rights
...
--- Windows Sharing ---
...
File           = /
Share name      = Root
Comment        =
AccessRight    = Full-Server-Password
Read-Only Password =
Full Access Password =

[END]
```

- Important!**
- o When editing the file, be sure that the equal sign and the parameter values are separated by a space.
 - o Do not remove the [END] marker from the file.

Appendix B Troubleshooting

This section provides useful information to help you resolve any difficulty you might have with your StorPoint CD+, namely:

Problem	See ...
The front panel indicators	page 128
Restoring the factory default settings	page 130
Running a diagnostic test	page 132
Errors when accessing the StorPoint CD+ or an inserted disc	page 133
Errors when Writing Data to a Disc	page 135
Low transfer rates when using disc changers	page 134
Problems connecting to the StorPoint CD+ in a PureIP environment	page 136
Problems running CD-ROM software	page 136
Difficulties locating the StorPoint CD+ in NetWare	page 136
Insufficient access rights in NetWare NDS	page 137
Name resolution problems in Windows (SMB)	page 139
Problems locating the domain controller in Windows) SMB	page 140

- Notes:
- o You will find more useful information such as technical notes and support FAQs on the Axis Support Web at <http://www.axis.com/techsup/>.
 - o You can also go to the StorPoint CD+ Support page, to solve any problems you may have seeing your devices and discs in your StorPoint CD+, finding your StorPoint CD+ in the network or installing your StorPoint CD+ in NetWare. From this web page you can also produce a Server Report which includes technical information about your StorPoint CD+.
 - o To receive updated information about Axis products, services and software updates by e-mail, you can register at the Axis web site at <http://www.axis.com>

The Front Panel Indicators

The front panel indicators show the status of the StorPoint CD+. The indicators have the following functions:

- **Status** - Flashes during startup. When the StorPoint CD+ is ready for use, the light turns solid green.
- **Drive** - Flashes to indicate activity on the SCSI/IDE bus.
- **Network** - Flashes to indicate the presence of network traffic.
- **Power** - Indicates that power is connected to the StorPoint CD+. This LED should always remain lit and is only used to indicate power is present in the StorPoint CD+ unit.

Normal Conditions

The Power LED is controlled by hardware and is always green when power is connected. When the system starts running after startup, the Status LED turns solid green. The Drive and Network LEDs are turned off.

This table shows the other front panel indicators under normal conditions:

Event	Status LED	Drive LED	Network LED
Initial power to unit.	GREEN	GREEN	GREEN
Power-up and self-test, approx. 30 seconds.	GREEN	GREEN	GREEN
Firmware preparation	GREEN		
Firmware startup.	GREEN *		
Startup sequence OK.	GREEN		
Normal operation.	GREEN		
Writing to the SCSI/IDE bus.		AMBER *	
Reading from the SCSI/IDE bus.		GREEN *	
100 Mbit packet arrived.			GREEN *
10 Mbit packet arrived.			AMBER *
Flash loading in progress.	AMBER *		

* Flashing, short interval.

** Flashing, long interval.

Error Conditions

This table shows various error conditions:

Event	Status LED	Drive LED	Network LED
New firmware required. Flash loading via FTP possible.	AMBER **		
Illegal serial number. Return unit.	RED *		
Error in Flash PROM. Return unit.	RED **		
Error in DRAM. Return unit.	RED **		
Error in DRAM expansion module. Replace DIMM module.	RED / AMBER		
Fatal SCSI/IDE error. Return unit.		RED	
Drive disconnected or not working properly.		RED *	
The network connection is down.			RED

* Flashing, short interval.

** Flashing, long interval.

Status Indicator Red

If the Status indicator turns red, this indicates a serious error in the hardware. If this happens, contact your dealer and return the unit for replacement.

Restoring Factory Default Settings

If required, you can restore the factory default settings to your StorPoint CD+. This might be needed if you have disabled all the network protocols, or if you have lost the Server password.

You can use any of these methods:

- Web browser
- Config.ini
- Push button

Step by step instructions for each method are given below.

- Caution!**
- o The node address, the Hardware Address parameter, will remain unchanged, but all other parameters will be restored. You will thus need to re-assign the IP address in order to re-establish the Web browser connection.

Web Browser

To restore the defaults settings using a Web browser:

1. Start the Web browser.
2. Enter the name or IP address of your StorPoint CD+ in the location/address field.
3. Click **admin**. You will be prompted for the Server password. By default, this is set to `pass`.
4. Click **Server Settings**.
5. Click **Factory Defaults**.
6. Select the required factory default option.

- Note:**
- o If you select the **Configurations** or the **All** option, you will need to re-assign the IP address as described in "*Assigning an IP Address*" on page 12.
7. Click **OK**.

The factory default setting will now be restored and the StorPoint CD+ will automatically restart.

Config.ini

To restore the defaults settings using the `config.ini` file:

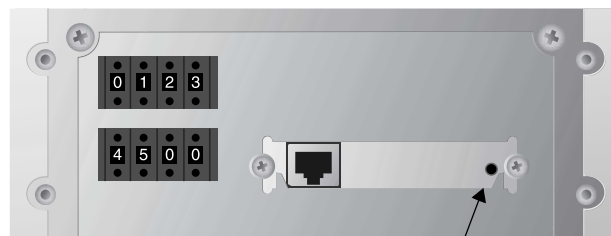
1. Locate the `config.ini` file using your standard file manager tool. You will find it in the `Root/System/ServerProperties` folder.
2. Use your preferred text editor and change the `Factory Defaults` parameter to `configuration`, `volumeProperties` or `all`. You will find the `Factory Defaults` parameter under the `[Server]` section.
3. Change the `Restart` parameter to `yes`. You will find the `Restart` parameter under the `[Server]` section.
4. Save the `config.ini` file.

The factory default setting will now be restored and the StorPoint CD+ will automatically restart.

Push Button

To restore the default settings using the Push button:

1. Shut down the StorPoint CD+.
2. Use a thin object, e.g. a pen to press and hold the Push button.
3. Switch on the StorPoint CD+.
4. Wait until the Status indicator flashes yellow (one flash/second).
5. Let go of the button at least two seconds.
6. Press and hold the Push button again until the Status indicator shows a steady yellow light. This may take 5-6 seconds.



Push button

7. Restart the StorPoint CD+ by switching the server off and on. The StorPoint CD+ is now reset to factory default settings.

Running a Diagnostic Test

The StorPoint CD+ Web Pages include a diagnostic test that you can run in order to check the memory and the performance of the connected drives.

Before You Begin

Note the following:

- Users that are currently accessing the StorPoint CD+ will be interrupted.
- The diagnostic test is only available the first hour after startup.
- If you want to repeat the test, you must first restart the StorPoint CD+.
- In order to test the data transfer performance of a drive, a disc including a file larger than 10 MB must be inserted.

Procedure

To perform the diagnostic test, follow these steps:

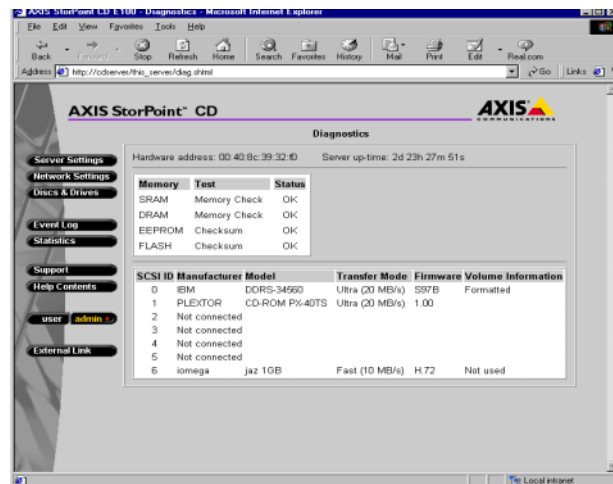
1. Start the Web browser, and enter the URL of the Diagnostics page in the location/address field:

```
http://<IP address>/this_server/diag.shtml
```

Example

```
http://192.16.253.80/this_server/diag.shtml
```

2. The Diagnostics page appears:



Make sure a suitable disc is inserted into each of the drives you want to test.

3. Start the diagnostic test by simply reloading/refreshing the Diagnostics page. The test takes a few minutes to complete.
4. Reload/refresh the page once again to display the results.

Errors when Accessing the StorPoint CD+ or an Inserted Disc

If you get error messages when trying to access the StorPoint CD+ or a disc:

LED Indicators	Consult the error table in section " <i>Error Conditions</i> " on page 129 to see if the front panel indicators can help you identify the problem.
SCSI Chain	Check the SCSI chain and ensure that all the drives are switched on and that only the last unit is terminated.
IDE Connector	Check that no device has been configured as Slave with no Master and ensure that all the drives are switched on.
IP Address	If using TCP/IP, make sure that you have assigned a unique and valid IP address to the StorPoint CD+. If you have changed the IP address, try restarting the StorPoint CD+.
SMB Protocol	In the Microsoft & IBM networking environments, verify that the SMB protocol is enabled.
WINS Database	If using WINS, check that the StorPoint CD+ is registered in the WINS database. If it is, there is probably a problem with the name resolution on your network.
NDS Installation	If you have changed any of the following parameters after installing the StorPoint CD+ in the NDS tree, you might need to repeat the installation in order to connect to the StorPoint CD+: <ul style="list-style-type: none">• IP address• Internal Net Address• IPX Enable• PureIP Enable
Discs	Check that the disc is not scratched or damaged in any way. Verify that the disc works when inserted into the CD drive of a regular PC. If you are using packet writing software or DVDs, make sure that the disc has an ISO 9660 compatible header.

Problems Finding a Wide-SCSI Hard Disk

The StorPoint CD+ is a narrow (8-bit) device. However, most hard disks are wide (16-bit) devices.

When you connect a wide-SCSI hard disk to your StorPoint CD+, you will need an active converter in order to terminate the high data byte.

- Important!**
- o Make sure the converter actively terminates the high byte. Do not use the converter on the last device in the SCSI chain. The last device should be a narrow device, e.g. a CD/DVD drive.

Low Transfer Rates when Using Disc Changers

Disc changer flutter can occur if a user requests access to a disc when another user is already reading data from another disc. The changer may then attempt to service both requests by repeatedly changing between the two discs and transferring a small amount of data each time. Because of the relatively long time needed to change discs, the data transfer rate to both users will become unacceptably low.

The JukeBox Lock Time parameter in the StorPoint CD+ configuration file specifies how long a user has exclusive access to a disc during a data read operation. This is to prevent disc change flutter in order to optimize access speed when many users are accessing different discs in the same changer.

The JukeBox Lock Time parameter will ensure that when there are simultaneous requests for access to different discs, a sizable block of data is transferred to each user before the access is changed.

- If the JukeBox Lock Time parameter is set too low, the data transfer rate will be unacceptably low.
- If the JukeBox Lock Time parameter is set too high, the disc drive will time-out on a second user's request before the first user's access is completed. This will result in users receiving a 'CD-ROM not available' notice.

The default setting is 0 seconds which disables this function.

- Note:**
- o If you attach a hard disk drive to the StorPoint CD+ SCSI bus or IDE bus, you can benefit from the hard disk caching facility described in *"Hard Disk Caching"* on page 100.

Errors when Writing Data to a Disc

The writing speed is by default set to the maximum speed for the currently used drive. If you experience problems when writing data to a disc, changing the writing speed might solve your problem.


To change the writing speed, follow these steps:

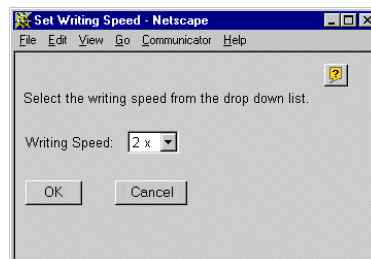
1. Start the Web browser and enter the IP address of your StorPoint CD+ in the location/address field.

The StorPoint CD+ File View page is displayed.

2. Click **admin**. You will be prompted for the Server username and password. By default, these are set to `root` and `pass`.



3. On the Server Settings page, click the Disc Drive icon  that corresponds to the CD-Recordable drive on the Server Settings page. The Disc Drive view will be displayed.
4. Click the **Change** button. The **Set Writing Speed** dialog appears on the screen.



5. Select the required writing speed from the drop-down list and click **OK**. The selected writing speed will now be displayed on the Disc Drive view.

Problems Running CD-ROM Software

- Drive Letter Mapping** If you have inserted a CD-ROM successfully, but the software on it refuses to run or produces error messages, the software may expect the CD-ROM data to be at root level. This is often the case with installation programs.
- In the NetWare and Microsoft & IBM networking environments, you then need to map that disc to a drive letter of its own. In NetWare, the Show All Volumes parameter must be enabled.
- MSCDEX Driver** Some CD-ROMs, e.g. the single user version of "Computer Select", requires the MSCDEX (Microsoft CD-ROM Extension) driver. The volume is usually released in a network version as well. Axis has developed two MSCDEX emulation programs:
- AXCDEX for Windows 95
 - AXISCDEX for Windows for Workgroups
- The required software is available on the Axis Web Site at <http://www.axis.com/products/software>. The MSCDEX emulation makes a CD-ROM on the StorPoint CD+ look as if it was locally connected to the PC.
- Single User Version** If the CD-ROM is a single user version, refer to your software license for the terms of use. You can restrict the number of simultaneous users to one by setting the User Limit parameter. Refer to "*General Disc Settings*" on page 35.
- Default Names** Some applications look for information on the CD-ROM using its default name - if you have set a volume name it may not recognize the disc and fail to run.

Difficulties Locating the StorPoint CD+ in NetWare

There are basically two different frame types on Ethernet networks, Ethernet II or IEEE 802.3. The IEEE 802.3 frame can be encapsulated in an IEEE 802.2 LLC frame or a SNAP frame. All four frame types are enabled by default with the value `auto`, which means that your StorPoint CD+ automatically adapts to the frame type used on the network. This will meet most requirements. Frame types that are not in use in your network will not be used by the StorPoint CD+.

However, depending on your network, you may want the StorPoint CD+ not to operate on some frame types. If your network has multiple sections with different frame types on some of the sections, then the StorPoint CD+ might log on to the wrong network section and adapt to a frame type incompatible with the intended network section. For this reason, you have the option to disable those frame types by changing the parameter from `auto` to `off`.

Alternatively, it is possible to use the eight digit network number appropriate to your segment of the network, in the form xx-xx-xx-xx (e.g. 00-3F-B5-01). In all normal cases this will not be necessary since autodetection will handle most cases. However, this must be done by directly editing the `config.ini` file located in the `System/ServerProperties` folder using a text editor. Although you cannot enter the network number from a Web browser, you can display the frame type and change the value to `auto` or `off`, if required.

Problems Connecting to the StorPoint CD+ in a PureIP Environment

SLP Parameters In the PureIP environment, make sure your StorPoint CD+ is properly configured for SLP. SLP (Service Location Protocol) is a protocol for locating resources in IP networks.

You can specify a SLP scope list and directory agents for the StorPoint CD+. From the StorPoint CD+ Web interface, you find the SLP settings on the [Network Settings | Detailed View | TCP/IP](#) page.

- Note:**
- o If you are using DHCP on your network, the SLP parameters can also be included in the DHCP scope. However, we recommend that you specify the SLP settings in the StorPoint CD+ parameter list instead.

Time Synchronization Make sure you have specified the time synchronization source properly. Note that in the PureIP environment, you cannot use SAP for automatic time synchronization. You can specify the name or IP address of the time server. You find the time source setting on the [Network Settings | Detailed View | NetWare](#) page.

Insufficient Access Rights in NetWare NDS

When you install the first StorPoint CD+ in the NDS tree, the StorPoint CD+ will extend the NDS Schema with a new attribute. This is needed in order to store the NDS access rights in the NDS tree. To carry out the schema extension, you must use user account with Supervisor rights to [Root] object of the NDS tree.

If you do not have Supervisor rights or if schema extensions are not allowed in your NDS tree, you can instead store the NDS access rights in a file on a Novell file server.

Follow these steps:

1. Create a directory on the Novell server where you want to store the access rights.
2. Make sure that your NDS tree is synchronized.

-
3. Install the StorPoint CD+ as described in "*Installation as an NDS Server*" on page 44. Make sure you set the NDS Rights Storage parameter to File and specify the name of the file where you want to store the access rights on the Novell file server.
 4. Logout and login again in order to obtain all the necessary rights on the StorPoint CD+ server object.
 5. Start NWAdmin. The server object just created will appear in the context where you installed the StorPoint CD+.
 6. Add the StorPoint CD+ server object as a trustee with Read, Write, Create, Erase, Modify and File Scan rights to the directory where you want to store the access rights.

The StorPoint CD+ will create the file once you start adding trustees.

Name Resolution Problems in Windows (SMB)

If you cannot find your StorPoint CD+ on your Windows (SMB) network, the reason might be a name resolution problem.

- Find Computer** When you have installed the StorPoint CD+, it takes a while before it shows up in the browser list in Network Neighborhood. You can either just wait for the browser list to be updated, or you can accelerate the process using the **Find Computer** function available in Windows 95/98/Me and NT/2000/XP. Alternatively, you can perform a manual mapping, e.g. use the command `NET USE X: \\AXISnnnnnn\Volumes.`
- Flush Name Cache** Use the command `NETSTAT -R` to flush your machine's name cache.
- Workgroup** Note that the StorPoint CD+ cannot be a master browser server in a workgroup. It is not possible to place the StorPoint CD+ or a group of StorPoint CD+ servers in a single workgroup without Windows machines running file and/or print sharing.
- Use WINS or LMHOST** If you are using NBT and try to access the StorPoint CD+ over a router, e.g. the StorPoint CD+ is located on a segment remote from your computer, you must use WINS or LMHOST. The recommended method is WINS. Provided that you have set the WINS parameters correctly, you should be able to access the StorPoint CD+ over routers. If this fails, check the following:
1. Make sure the StorPoint CD+ has been registered in your WINS database located on the Windows NT/2000 server. If the StorPoint CD+ is registered and you still cannot see or access it over the Network Neighborhood, you probably have other name resolution problems on your network.
 2. Ping the unit via its IP address to make sure that you have TCP/IP connectivity.
 3. Ping the unit using the SMB server name (NetBIOS) to check that the name resolution works.
 4. If you are using WINS, try a "static mapping" where you connect the IP address of the StorPoint CD+ to its NetBIOS name. Note that if you used DHCP, you should add a reservation where you connect the MAC address of the StorPoint CD+ to a reserved IP address. It is often recommended that you use these types of settings for server equipment. Refer to your Windows NT/2000 server manuals for more information on this.

Problems Locating the Domain Controller in Windows (SMB)

If there is a problem locating the primary domain controller when using user-level security mode in Windows (SMB), all users will be denied access to the StorPoint CD+.

Web Browser You can verify the configuration settings from the StorPoint CD+ web interface. Within the Administration Web pages, click **Network Settings, Detailed View**, and select the **Windows (SMB)** tab to do that.

Local Administrator Account In Windows NT/2000, you can correct the problem by logging on to the StorPoint CD+ as local administrator. Note that the local administrator is not the same as an Administrator with an account on the domain.

In the Map Network Drive dialog, specify the following:

Path:	The StorPoint CD+ name
Connect as:	Server name\Administrator
Password:	The password set in the ServerPassword parameter

Example:

The host name of the StorPoint CD+ is `cdserv`.

Path:	<code>\\cdserv\root</code>
Connect as:	<code>cdserv\Administrator</code>

- Note:**
- o In Windows 95, you cannot tell the SMB client to change domain and user when you are already logged in. Therefore, you cannot use the local administrator account to solve domain problems in the Windows 95 environment

Appendix C Upgrading the StorPoint CD+

This section includes the following information:

Task	See ...
Obtaining new software	page 141
Upgrading the firmware	page 142
Extending the RAM memory	page 145

Obtaining New Software

The following software for the StorPoint CD+ can be updated free of charge:

- The StorPoint CD+ software held in Flash memory
- AXIS StorPoint Disco
- AXIS ThinWizard

Note: o Stay current on the latest news, products, solutions and software upgrades from Axis. Register for updated information via e-mail from Axis at the Axis web site at www.axis.com

Over the Internet Check the Axis web Site at <http://www.axis.com/>, where you can download the latest versions of the software. A link to the Axis web Site is available from the StorPoint CD+ web pages.

Your Dealer Contact your dealer to check if there have been any new issues of the software. You should have your present version numbers ready to compare against the latest software issues from Axis.

Upgrading the Firmware

Using Windows Explorer Drag-and-Drop

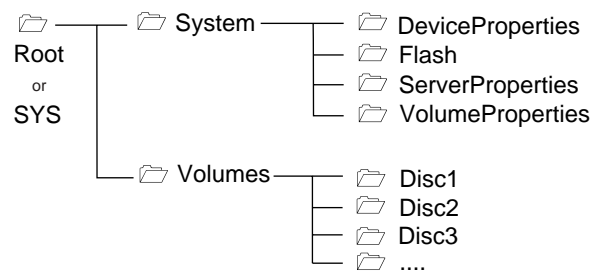
The StorPoint CD+ firmware can easily be upgraded by using the Windows Explorer drag-and-drop.

To upgrade using Windows Explorer, you need the following:

- The file with the new StorPoint CD+ software. The name of this file is of the form `product_version.bin`, e.g. `cdplus_600.bin` for the StorPoint CD+ software release 6.00.
- A computer running Windows Explorer.

Follow these steps to upgrade the StorPoint CD+ by using drag-and-drop:

1. Start the Windows Explorer.
2. Find the StorPoint CD+.
3. Expand the Root and System folders.
4. Copy the new firmware file to the Flash folder.



5. Wait for the copy to complete.

- Caution!**
- o The StorPoint CD+ will automatically restart when the upgrade is complete. It is very important that you do NOT press the Power button during the upgrade.

Using AXIS ThinWizard

The AXIS ThinWizard enables batch upgrading of several AXIS servers. The program retrieves the new software from the Axis Web Site automatically.

For more information about AXIS ThinWizard, refer to "Event Log" on page 109.

Follow these steps to upgrade the StorPoint CD+ using AXIS ThinWizard:

1. Start the Web browser and enter the name or IP address of the AXIS ThinWizard server in the location/address field.

Note: o If the AXIS ThinWizard server is installed on a port other than 80, you must add `:<port number>/` to the URL.

Example:

```
http://192.16.253.80:8033/
```

2. Log in to AXIS ThinWizard.
3. Click **Manage Network** in the main menu.
4. Select the network group that includes your StorPoint CD+. Note that you can only update servers that are included in the selected network group.
5. All the detected servers included in the network group are listed. Click **Firmware** to start the Upgrade Wizard.
6. Follow the instructions on the screen in order to complete the installation.

Using FTP

The StorPoint CD+ firmware can easily be upgraded over the network using FTP on a TCP/IP network. You will need the following:

- The file with the new StorPoint CD+ software. The name of this file is of the form `product_version.bin`, e.g. `cdplus_600.bin` for the software release 6.00 for the Ethernet version of the StorPoint CD+.
- A computer on the network with TCP/IP and FTP.
- The StorPoint CD+ must also be installed on the network with TCP/IP as described in "Assigning an IP Address" on page 12.

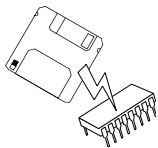
Follow these steps to upgrade the StorPoint CD+ using FTP:

1. Go to the folder that contains the file you are going to download.
2. Log in to the StorPoint CD+ with the command:

```
ftp <IP address>
```

where `<IP address>` is the name or IP address of your StorPoint CD+.

3. You will be prompted for user id and password. Use the user id `root`, which has the default password `pass`.



-
- To change to binary transfer mode, issue the command:

```
bin
```

- Issue the command:

```
put <software name> flash
```

where `<software name>` is the name of the new software, e.g. `cde_500.bin`.

- Wait for the flash memory load to finish. This normally takes 1 to 4 minutes. The unit will then automatically restart with the new StorPoint CD+ software.
- Log out using the command `quit`, `bye` or `exit` depending on your FTP version.

- Caution!**
- Be careful not to interrupt the file transfer. If the flash loading fails, the StorPoint CD+ will not be accessible from the other protocols such as Windows (SMB), Web browser (HTTP) etc. However, you can still access it via FTP in order to carry out the upgrading once again.

Extending the RAM Memory

This section describes how to increase the performance of your StorPoint CD+ by adding extra memory.

The basic 32 MB of RAM can be increased up to 256 MB. The extra cache memory will speed-up data flow rates, especially when several users are accessing the same disc.

Memory Modules

You can add one module of 64, 128 or 256 MB in size.

- o If a module is connected, the mounted 32 MB SDRAM will become inactive.

Supported DIMM Modules

- SDRAM
- PC100 or PC133
- CL2 or CL3 (CL2 preferred)
- 168 pin DIMM module
- 64 bits of Data
- Unbuffered
- Non parity (Non ECC)
- +3.3V
- Refresh 4k/64ms or 8k/64ms
- SPD (Serial Presence Detect)

Installation Procedure

Follow these steps to add the memory module:

- Caution!**
- o Always use an antistatic bracelet when handling the memory modules.
1. Unplug the power supply from the StorPoint CD+
 2. Remove the server casing.
 3. Release ejector latches on DIMM socket X4 by pushing them outwards from the socket. Slide the DIMM module into socket X4 at an angle of 25 degrees. When fully inserted, the ejector latches will automatically lock the DIMM module into place .
 4. Replace the server casing.
 5. Power up the StorPoint CD+. The new memory module is automatically identified and the usage optimized by the StorPoint CD+.

Appendix D Tower and Drive Installation

This appendix includes the procedures for installing the StorPoint CD+ in a tower and connecting the drives.

Hardware Inventory

Unpack and inspect all parts for damage. Contact your dealer if anything is missing. All packaging materials are recyclable.

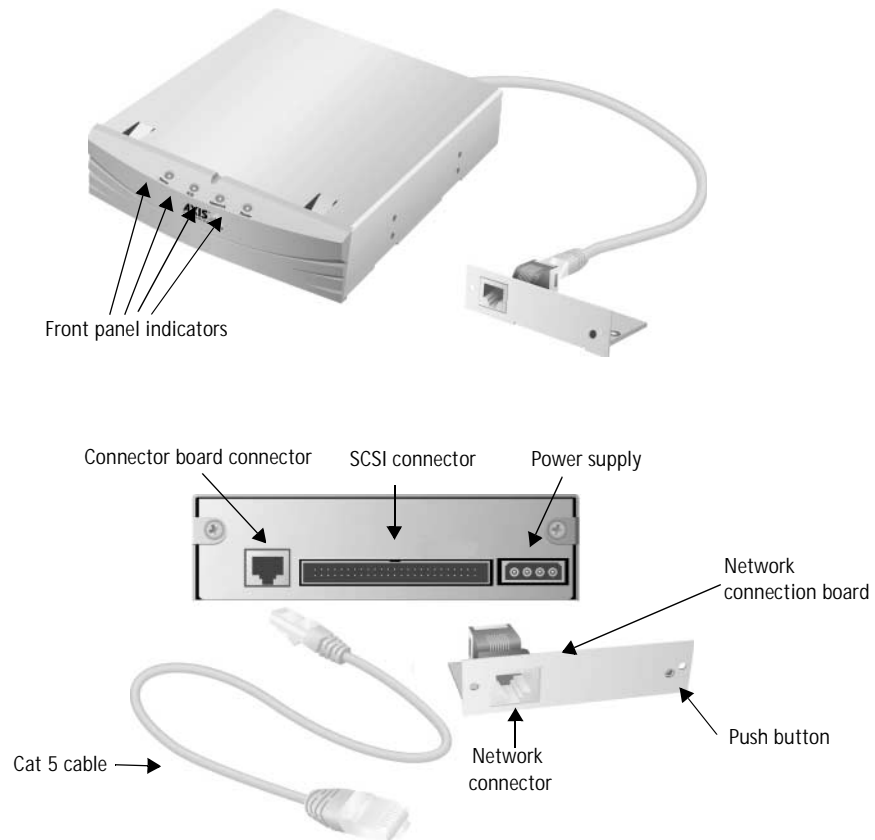
The standard delivery includes the following:

Hardware	Description	Part Number
CD-ROM Server	AXIS StorPoint CD+ IDE/T	0150-001-01
	AXIS StorPoint CD+ SCSI/T	0151-001-01
	AXIS StorPoint CD+ Dual SCSI/T	0152-001-01
	AXIS StorPoint CD+ BASIC SCSI/T	0153-001-01
	AXIS StorPoint CD+ BASIC Dual SCSI/T	0154-001-01
Screw /Washer kit	(To attach the server unit)	18235
Product Label	(To be attached to the back of the tower.)	18300
Network Connection Board	The StorPoint CD+ must be used together with the network connection board	16273
Shielded Cat 5 Cable 0.5m	(To connect the server unit and the network connection board)	16283
CD-ROM	AXIS Network Product CD	19114
Printed Material	AXIS StorPoint Instant uP and Running R2.0	19137

Physical Description

Familiarize yourself with your StorPoint CD+. This information provides a useful reference during the installation.

SCSI Server



Network Connector The StorPoint CD+ is equipped with a 100baseTX connector. The internal network connector will automatically adjust to 10baseT or 100baseTX, full or half duplex mode. Use a Category 5 UTP cable for the 100baseTX operation.

- Note:**
- o When the StorPoint CD+ has been installed in a tower, the network connector is found on the network connection board that appears at the back of the tower. Note that the network cable cannot be connected directly to the server unit.

SCSI Connector The StorPoint CD+ has a SCSI connector for connecting disc drives, jukeboxes, changers and LUN expanders. The dual SCSI version is equipped with two SCSI connectors.

Push Button The Push button is used for restoring the StorPoint CD+ parameters to the factory default settings. See "*Restoring Factory Default Settings*" on page 130.

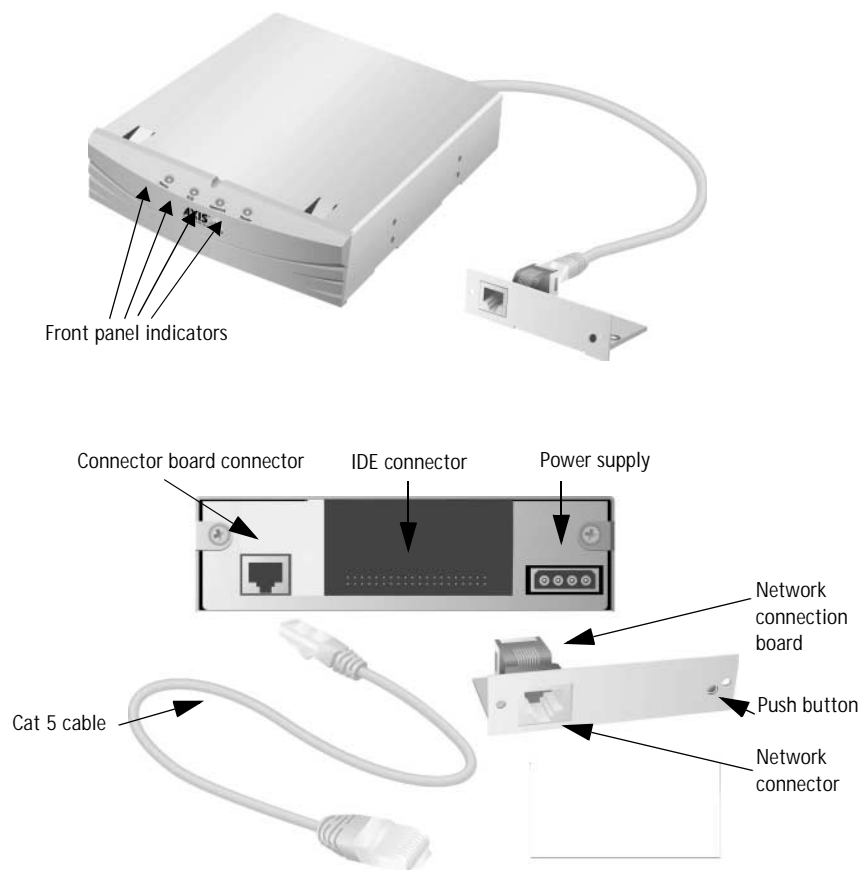
LED Indicators The StorPoint CD+ front panel indicators show the status of the unit. The indicators have the following functions:

- **Status** - flashes during startup. The light turns solid green when the StorPoint CD+ is ready for use.
- **Drive** - flashes to indicate disc access.
- **Network** - flashes to indicate the presence of network traffic.
- **Power** - remains on to indicate that power is present in the unit.

Refer to "*The Front Panel Indicators*" on page 128 for a list of error conditions.

Serial Number The StorPoint CD+ serial number is found on the labels at the underside of the server unit and at the back of the tower.

IDE Server



Network Connector The StorPoint CD+ is equipped with a 100baseTX connector. The internal network connector will automatically adjust to 10baseT or 100baseTX, full or half duplex mode. Use a Category 5 UTP cable for the 100baseTX operation.

- Note:**
- o When the StorPoint CD+ has been installed in a tower, the network connector is found on the network connection board that appears at the back of the tower. Note that the network cable cannot be connected directly to the server unit.

IDE Connector The StorPoint CD+ has IDE connectors for connecting disc drives, jukeboxes, changers and LUN expanders. Three of the four connectors are placed under the cover.

Push Button The Push button is used for restoring the StorPoint CD+ parameters to the factory default settings. See "*Restoring Factory Default Settings*" on page 130.

LED Indicators The StorPoint CD+ front panel indicators show the status of the unit. The indicators have the following functions:

- Status - Flashes during startup. The light turns solid green when the StorPoint CD+ is ready for use.
- Drive - Flashes to indicate disc access.
- Network - Flashes to indicate the presence of network traffic.
- Power - Remains on to indicate that power is present in the unit.

Refer to "*The Front Panel Indicators*" on page 128 for a list of error conditions.

Serial Number The StorPoint CD+ serial number is found on the labels at the underside of the server unit and at the back of the tower.

Installing the StorPoint CD+ in a Tower

The StorPoint CD+ is installed in standard 5.25 inch towers.

- Caution!**
- o To avoid the risk of electrical shock or other injury, disconnect power from the tower before removing the chassis.

If not already installed in a tower when delivered, follow these steps:

1. Prepare the tower for the installation, e.g. by removing the chassis.
2. Make a note of the serial number of the StorPoint CD+, or attach the enclosed product label to the back of the tower. The serial number is found on the underside label of the StorPoint CD+ and will be needed during the TCP/IP configuration.
3. Slide the StorPoint CD+ into the tower.

-
4. Fix the StorPoint CD+ with the four screws supplied. Use the upper or lower holes depending on type of tower and mounting.



- Caution!**
- o The length of the screws must not exceed 0.2 inch (5 mm). If they do, the internal components of the StorPoint CD+ may be damaged.
5. Attach the power cord to the StorPoint CD+. The power supply connector is a standard PC 4-pin power supply connector (12 and 5 V DC). Hence, the power supply available in the tower can also be used to supply the StorPoint CD+.
 6. Connect the external network connector board to the StorPoint CD+ using the shielded CAT 5 cable.



- Important!**
- o It is not possible to connect an RJ-45 cable directly between the back of the StorPoint CD+ server unit and the hub.
7. Mount the board on the back of the tower. The mounting plate on the board fits into the standard Centronics cut-out available on most towers.
 8. Attach the product label to the back of the tower.

Connecting the Drives to the StorPoint CD+

A single StorPoint CD+ can service up to 7, 8 or 14 CD/DVD-ROM drives or up to six or seven hard disks, depending on model.

- **SCSI Server** - The SCSI bus allows 7 drives to be connected to the StorPoint CD+. Each unit on the SCSI bus must have a unique SCSI address. To work properly, the bus must be electrically terminated at both ends.

If you want to use the hard disk caching facility, you must connect 1 to 6 hard disk units to the StorPoint CD+. The StorPoint CD+ will automatically format the hard disks detected on the SCSI bus.

- **IDE Server** - The IDE bus allows 8 drives to be connected to the StorPoint CD+. Each unit on the IDE bus must be assigned as Master or Slave.

If you want to use the hard disk caching facility, you must connect 1 to 7 hard disk units to the StorPoint CD+. The StorPoint CD+ will automatically format the hard disks detected on the IDE bus.

- Caution!**
- o Always make sure that power is not connected to the StorPoint CD+ or any of the drives when making changes to the SCSI chain. The SCSI bus or IDE bus may become damaged if you connect or disconnect any units when the power is on.

Dual SCSI Version It is recommended that the dual SCSI version of StorPoint CD+ is installed in a 14 bay tower, i.e. all the drives are housed in the same enclosure with the SCSI cables built-in.

- Note:**
- o However, if you are using two separate towers, we recommend that the cable from the StorPoint CD+ to the second tower complies with the following maximum cable length requirements:
 - The cable from the StorPoint CD+ to the connector leaving the first tower should not exceed 60 cm.
 - The cable connecting the two towers should not exceed 50 cm.

Connecting the SCSI Drives

To connect the SCSI drives to the StorPoint CD+, follow these steps:

1. Connect the SCSI cable to the SCSI connector on the StorPoint CD+.
2. Connect the SCSI cable to the drive(s).
3. Set a unique SCSI address 0 through 6 for each of the connected drives. The dual SCSI version has two separate buses with addresses 0 through 6 available on each. Refer to the drive documentation for instructions on how to set the SCSI address on your drives.

- Note:**
- o The SCSI address of the StorPoint CD+ is 7, and cannot be changed.

-
4. Connect an external, preferably active, SCSI terminator to the last drive in the SCSI chain. If there is only one drive, it is the last one in the chain and must be terminated. The StorPoint CD+ has built-in SCSI termination which is always switched on. Therefore, the server must be physically located at one end of the chain. This is the case for both the single and dual SCSI versions.

- Note:
- o Do not terminate the drives placed between the StorPoint CD+ and the last drive.
5. Switch the power on to the whole of the tower.
 6. The StorPoint CD+ front panel indicators will flash during power-on and self-test. When the Status indicator stops flashing and turns solid green, the StorPoint CD+ is ready for use.

Connecting the IDE Drives

To connect the IDE drives to the StorPoint CD+, follow these steps:

1. Connect the IDE cable to the IDE connector on the StorPoint CD+.
2. Connect the IDE cable to the drive(s).
3. Assign each of the connected drives to Master or Slave. Refer to the drive documentation for instructions on how to set the device type for your drives.

- Notes:
- o The server must be physically located at one end of the cable.
 - o Do not set two drives to master or slave on the same IDE bus.
4. Switch the power on to the whole of the tower.
 5. The StorPoint CD+ front panel indicators will flash during power-on and self-test. When the Status indicator stops flashing and turns solid green, the StorPoint CD+ is ready for use.

Appendix E Technical Specifications

Supported Systems	
Novell NetWare	NetWare 3.11, 3.12, 4.10, 4.11 and 5.0.
Microsoft Windows	Windows for Workgroups, Windows 95, Windows 98/Me Windows NT, Windows 2000, Windows XP.
OS/2	OS/2 Warp 4, IBM Peer for OS/2.
TCP/IP	Supports all UNIX/Linux dialects through NFS over UDP/IP on TCP/IP networks.
Macintosh	Mac OS 7.x, 8.x, 9.x using AppleShare 3 or later.
Web Browser	Internet/intranet over HTTP 1.0 and HTML 2.0 compatible browsers.
Supported Protocols	
Novell NetWare	NDS, NCP (IPX, NetWare/IP and PureIP).
Windows and OS/2	SMB over NetBIOS/NetBEUI, SMB over NetBIOS/TCP/IP, WINS/NBNS.
UNIX	NFS over UDP/IP, TCP, ARP, RARP, BOOTP, DHCP, SNMP, FTP.
Macintosh	AFP over AppleTalk, AFP over TCP/IP.
Web Browser	HTTP over TCP/IP.
Network Management	SNMP MIB-II and private enterprise MIB. Platform independent configuration and management via standard Web browser.
Security	
Novell NetWare	Encrypted passwords. Authorization via file server, including NDS.
Windows and OS/2	User-level or share-level access control.
UNIX	NFS version 2, PCNFSD authentication via file server.
Macintosh	Encrypted passwords. Password for individual/all discs. User level authentication via file server.
Web Browser	Password.
Supported File Systems	High Sierra (HSF), ISO 9660, Multisession, ISO 9660 with Rock Ridge or Joliet extensions, ISO 9660 level 3 support (used by most DVD-ROM, CD/RW and CD-R packet write), ISO 9660 with Apple extensions, HFS, CD-UDF version 1.0 and 1.5.
Software Updates	Flash memory allows central and remote updating of the StorPoint CD+ software over the network using Windows Explorer drag-and-drop or FTP over TCP/IP.
Performance	Data throughput up to 4000 kB/sec.
Hardware	CPU: 32 bit RISC controller (ETRAX 100LX). Flash memory: 4 MB. RAM: 32 MB, expandable up to 256 MB.
Attachments	RJ-45 (for 100baseTX and 10baseT).
SCSI CD/DVD-ROM Drive Connections	Up to 7 SCSI CD/DVD-ROM drives (14 for the dual SCSI version). Changers are supported.
IDE CD/DVD-ROM Drive Connections	Up to 8 IDE CD/DVD-ROM drives.
Hard Disk Caching	
Caching Options	Performance caching (Partial, Mirror, None) Archiving (Manual, Automatic)
Caching Speed	Mirror/Archive caching performance: 4 min/650 MB.
Compatible CD-ROM Drives	Standard SCSI or IDE CD-ROM drives. Towers and jukeboxes with LUN based addressing. Support for firmware upgrade to Pioneer Disc Changer DRM-6324X via the StorPoint CD+ Web interface.

SCSI Hard Disk Drive Connections	6 hard disk drives (13 for the dual SCSI version) for caching of CD/DVD-based data.
Connector	Narrow 50-pin header.
Speed	Asynchronous (< 5 MB/sec), synchronous (5 MB/sec), fast SCSI (10 MB/sec) or ultra fast SCSI (20 MB/sec).
IDE Hard Disk Drive Connections	7 hard disk drives for caching of CD/DVD-based data.
Connector	Four 40 pin header.
Speed	DMA Mode 2 (16.67 MB/s), PIO Mode 4 (16.67 MB/s).
Power Supply	Via 4-pin power connector: IDE without DIMM module - 12V DC(0W) and 5V DC (6W) IDE with a DIMM module - 12V DC (0W) and 5V DC (11W) Single SCSI version without a DIMM module - 5V DC (8W) Single SCSI version with a DIMM module - 5V DC (13W) Dual SCSI without a DIMM module - 5V DC (13W) Dual SCSI with a DIMM module - 5V DC (18W)
Dimensions	Height: 1.7 in (4.3 cm), Width: 5.9 in (14.9 cm), Depth: 8.8 in (22.4 cm).
Weight	2 lbs (0.9 Kg).
Environmental	
SCSI	Temperature: 40-105°F (5-40°C). Humidity operational: 20-80% RHG, non-condensing.
IDE	Temperature: 40-105°F (5-40°C). Humidity operational: 20-80% RHG, non-condensing.
Approvals	
EMC	SCSI - CE: EN 55022/1998, EN 55024/1998. FCC Subpart B Class B. CE IDE - CE: EN 55022/1998, EN 55024/1998. FCC Subpart B Class B.
Safety	EN 60950, UL1950. Approved power supply for all countries.
Warranty	3 years.

All specifications are subject to change without prior notice.

Appendix F Glossary

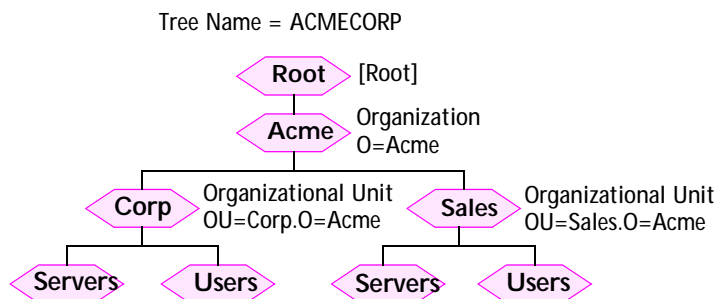
AFP	AppleTalk Filing Protocol. A network file system that supports HFS specific entities, such as data forks and finder metadata.
AIX	Advanced Interactive eXecutive. A version of the UNIX operating system from IBM that runs on various IBM computers including Mainframe systems.
ARP	Address Resolution Protocol. A protocol within TCP/IP networks that allows a host to find the physical address of a node on the same network. ARP cannot be used over routers.
BOOTP	Boot Protocol. A TCP/IP protocol, which allows an Internet node to discover certain startup information such as its IP address. A request made to an active BOOTP daemon initiates a search of the Boot Table for an entry matching the unit's Ethernet address. If a matching entry is found, the daemon then downloads the IP address to the device.
BSD	Berkeley Software Distribution. The University of California, Berkeley additions to the UNIX operating system.
DBCS	Double Byte Character Set.
DHCP	Dynamic Host Configuration Protocol. A system based on network interface card addresses for allocating IP addresses and other configuration information for networked systems. It provides automatic but temporary assignment of IP addresses from a central pool.
Distinguished Names	Names in the NDS Directory tree have two name types: typeful or typeless. A typeful name includes the name types (OU, O, etc.) when identifying the distinguished name of the object. A typeless name excludes the name types. You can use either syntax when specifying the parameters.

Example 1 (`NDS`ServerContext ***parameter syntax***):

- o Typeful distinguished name: `.OU=Corp.O=Acme`
- Typeless distinguished name: `.Corp.Acme`

Example 2 (`NDS`AdminName ***parameter syntax***):

- o Typeful distinguished name: .CN=Admin.O=Acme
Typeless distinguished name: .Admin.Acme



Objects in an NDS Directory Tree

- DNS Domain Name Service. Reflects the server names and addresses within a network.
- DSS Domain SAP/RIP Services. Provides a source of SAP/RIP information in a NetWare environment.
- DVD Digital Versatile Disk. An optical disk that store up to 16 times more information than a standard CD-ROM disk. Developed for video, multimedia etc.
- FAT File Allocation Table. A file system originally invented for the DOS operating system.
- Flash Memory Flash Memory is a memory chip that, like ordinary ROM memory, keeps its contents even when the power is turned off. What makes it unique is the possibility to erase its contents and write new data to it. The software that runs on your StorPoint CD+ is stored in Flash Memory, i.e. when software updates are available, you can update the StorPoint CD+ without having to replace any parts.
- FTP File Transfer Protocol. The TCP/IP protocol used for logging into a network and transferring files.
- HFS Hierarchical File System. This is a file system used om Macintosh discs.
- HTML Hypertext Markup Language. A standard hypertext language used for creating Web pages and other hypertext documents.
- HTTP Hypertext Transfer Protocol. The TCP/IP protocol for Web based communication.
- IDE Integrated Device Electronics. A high-speed parallel interface, used to connect a computer to peripheral devices using channels.

-
- IP Internet Protocol. The TCP/IP session-layer protocol that regulates packet forwarding by tracking Internet addresses, routing outgoing messages and recognizing incoming messages.
- LED Light Emitting Diode. The LED indicators on the StorPoint CD+ front panel indicate the status of the unit.
- MIB Management Information Base. A database of network configuration information used by SNMP and CMIP to monitor or change network settings.
- NCP NetWare Core Protocol. Network clients use the NCP to request services of servers, and servers use NCP to provide services, such as file and print services.
- NDS NetWare Directory Services. Manages network resources such as NetWare servers and volumes.
- NIS Network Information Services. The security and file-access databases on UNIX systems, previously known as Yellow Pages.
- NTP Network Time Protocol. Used by Internet time servers and their peers to synchronize clocks, as well as automatically organize and maintain the time synchronization subnet itself.
- RARP Reverse Address Resolution Protocol. A TCP/IP protocol governing the translation of a Data-Link Control (DLC) address to an IP address. A request made to an active RARP daemon initiates a search of the Ethernet Address Table for an entry matching the unit's Ethernet address. If a matching entry is found, the daemon then downloads the IP address to the device. RARP operates within a single network segment only, i.e. it does not work over routers.
- RISC Reduced Instruction Set Computing. A processor that recognizes only a limited number of assembly-language instructions.
- SAP Service Advertising Protocol. A network name advertising service that e.g. file servers can use for advertising their existence to network clients.
- SCSI Small Computer System Interface. A high-speed parallel interface, used to connect a computer to peripheral devices using just one port.
- SLP Service Location Protocol. A protocol used for advertising and discovering network services, e.g. printers and CD servers.
- SMB Server Message Blocks. A protocol that makes use of NetBIOS.
- SNMP Simple Network Management Protocol. A TCP/IP protocol for managing and monitoring nodes on a network.

-
- TCP Transmission Control Protocol. The connection-oriented, transport-level protocol used in the TCP/IP suite of protocols.
- UDF Universal Disk Format. A specification developed by OSTA (Optical Storage Technology Association) for use in optical storage devices. The file format for DVD.
- UNIX A 32-bit multitasking, multiuser operating system originally developed by AT&T.
- URL Uniform Resource Locator. A way of specifying the location of publicly available information on the Internet.
- WINS Windows Internet Name Service. Allows Windows-based clients to locate NetBIOS resources on TCP/IP networks. When using TCP/IP, the computer name must be resolved to an IP address. WINS is designed to eliminate the need for broadcasts in order to resolve computer names to IP addresses. It provides a dynamic database that maintains computer name to IP address mappings.
- Wizard A form of user assistance that automates a task through a dialog with the user in order to speed up operation. These tasks are typically complex and require experience.

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